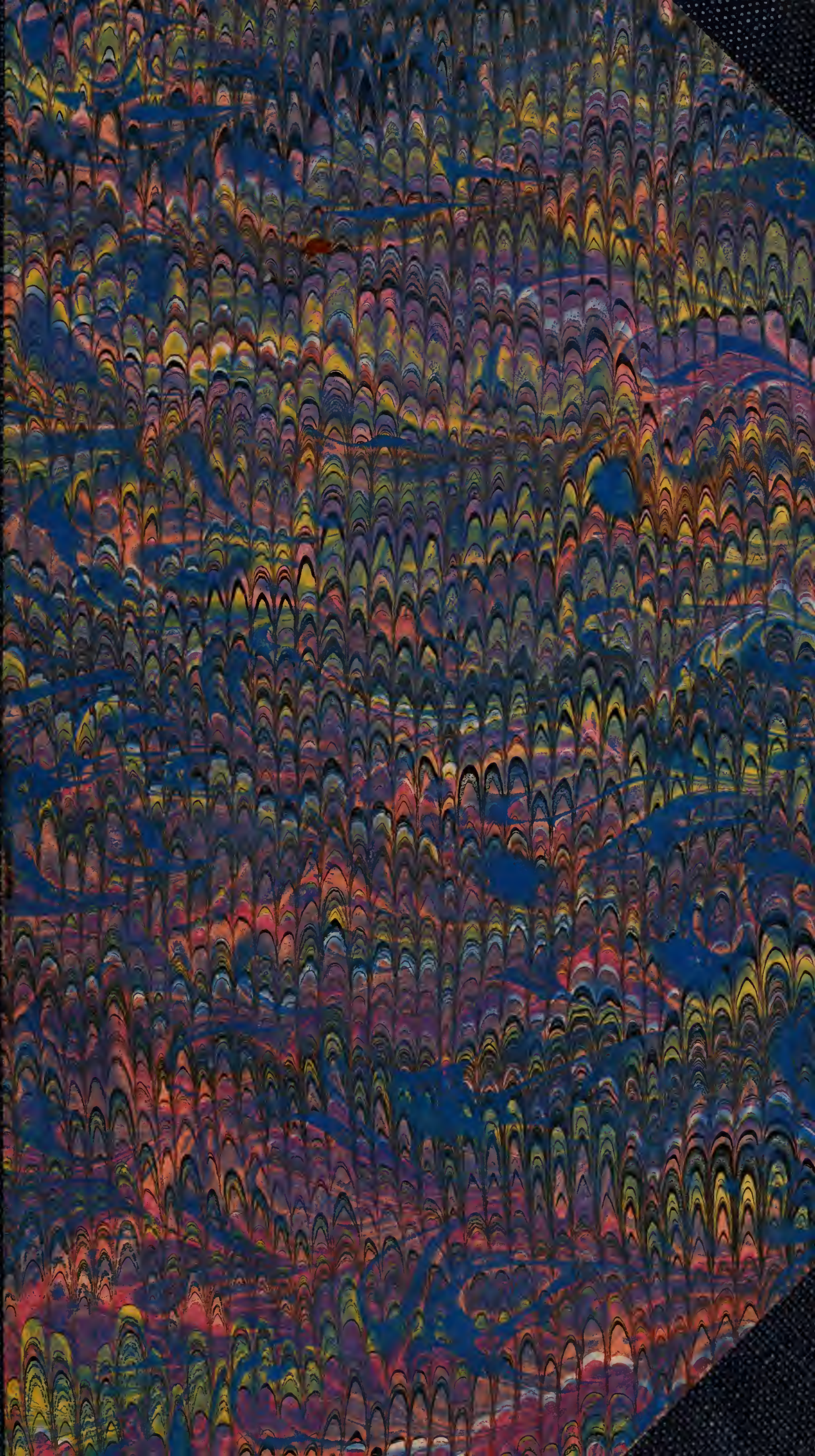

Fr. Henry Warburton Esq M.P.

&c &c

forwarded by the author with the greatest respect and his best thanks for the 1st & 2d parts of the Report on Medical Education &c &c

SKETCH

OF THE

Medical and Statistical History

OF

EPIDEMIC FEVERS IN IRELAND,

FROM 1798,

AND OF

PESTILENTIAL DISEASES,

SINCE 1823;

WITH AN

APPENDIX,

Consisting of a Dissertation on the Pathology of Fever, Edit. Dublin, 1826, and a Comparative View of Cholera Morbus—Edit. Dublin, 1832—Illustrated by *cases.*

BY WILLIAM STOKER, M.D.

Honorary Fellow of the King and Queen's College of Physicians in Ireland.

"In the" *Scientific*, "as in the natural world, the desolating torrent which sweeps away its bulwarks, often loses its power in the depth of its excavations, whilst it forms a new barrier out of the very elements it has displaced."

Ed. Rev., Vol. lx. No. cxil., Art. British Association.

Dublin:

MILLIKEN & SON, GRAFTON-ST., AND HODGES AND SMITH, COLLEGE-GREEN.

1835.

Ἀρχὴ μὲν οὐδεμία ἐστὶν τοῦ σώματος, ἀλλὰ πάνα ὁμοίως ἀρχὴ καὶ τελευτή.

Hippocrates, Lib. *De locis in homine.*

ADVERTISEMENT.

The following sheets, with little variation, were presented to the Medical Section of the British Association, but were not read, in consequence of the length to which they necessarily ran, and because they were thought to embrace some topics not considered strictly conformable to the Sectional denomination, "Anatomy and Medicine," but why, it is probable the medical reader will think rather extraordinary. However as the matter they contain has been deemed by many of great and general importance, it is now presented to the public. It will be found to meet those very points which were specially designed to be insisted on in the section to which it was offered, particularly, the dependence of medicine on anatomy, stethoscopy, or solidism exclusively; and also that the nature and treatment of epidemic diseases, could be founded on such doctrine. It maintained the contrary, and that sound pathology, must necessarily be based, on that autopsy, which is alike attentive to the solids and fluids, either before, or as found after, death. The exclusive principle of its denomination, however, though vigilantly enforced in the medical section, through the entire week of the meeting in Dublin, and zealously supported too by valuable contributions, as well by the results of experiments on the motions and sounds of the heart, as by very numerous specimens of morbid anatomy brought from the museums, yet was ultimately abandoned on the suggestion of Dr. Granville, of London; and the title itself, at the close of the meeting, was changed to that of "Medical Science." When the short-lived fate of the mathematical, mechanical, and chemical sects of physicians, notwithstanding the ability and zeal of their supporters, is recollected to have mainly depended on their exclusiveness, those who are best acquainted with the inestimable additions, made by morbid anatomy, must have felt alarmed lest similar circumstances should involve the anatomical sect, also, in another revolution of the same kind, and lead, likewise, to the destruction of some of the valuable materials on which it has been erected. Such considerations have assisted to produce this publication, and the appendix also in lieu of that notified in drawing up the sketch itself from the annals of the Cork-street fever hospital. This substitution of a dissertation on the institutes of medicine, which maintained the same Pathology, and of a Comparative view of Cholera Morbus, in which the distinctive characteristics of the blood, indicated in that dissertation, were auxiliary in marking the transition of diseases, in successive seasons, is intended to assist in deciding another question discussed in this sketch, namely, the nature and treatment of the existing epidemic; as it is one which still appears to be of paramount importance, not only to the faculty of medicine, but to the public at large.

21, York-street,
23d October, 1835.

CONTENTS.

APPENDIX.

A SKETCH

OF THE

Medical and Statistical History

OF

EPIDEMIC DISEASES IN IRELAND,

&c. &c. &c.

SECTION I.

Introduction—Period from 1798 *to* 1816 *inclusive.—Increase of febrile disease, gradual but constant, sometimes symptomatic sometimes Idiopathic, but more generally these forms combined.—Instruction derived in all cases from the morbid changes in the blood, especially in distinguishing between inflammatory and typhoid disease.—Great value of these distinctions evinced by successful results.*

Close and almost daily observation of the constant growth of epidemic diseases, in Dublin, since 1798, and of pestilence periodically within the last twelve years, has led me, in continuance of my public engagements, again to attempt a sketch of the medical history of that period.* By faithfully detailing the events I have observed, and as they are recorded in the annals of the institutions in which I have been engaged, and arranging them in the consecutive order in which they occurred, I hope to present an incontrovertible statement of facts, which, if duly considered by those devising means of prevention and cure, would, I am convinced, have rendered their efforts more successful. At least that much of the prejudice of preconceived opinions, which has hitherto been the source not only of failure but also of mischief, in the otherwise valuable institutions of Dublin would, I believe, have been obviated.†

Materials thus collected for others better qualified to compile them, may also aid in the task of tracing effects to their true causes; and I

* Physician to either the Dublin General or Meath-street Dispensary from 1798 to 1803—to the Fever Hospital and House of Recovery, Cork-street, from 1803 to July, 1834, 100,000 patients being received in that time—and to the Molyneux Asylum for blind females since 1815.

† See the Medical Reports of the Dublin Fever Hospitals from 1803, and those of the Cholera Hospitals since they were opened for the reception of patients, in 1832.

am persuaded, that however difficult that may be, it can in no case be more indispensable, and hardly more important, than in enquiring the causes of the rapid advance of disease in the Irish metropolis, as if in defiance of the extensive apparatus, and of the numerous means provided there to check the progress of contagion. The extraordinary phenomena, both moral and physical, which *pari passu* have accompanied that long-continued progress of disease, have been noticed since 1804, in the annual reports from the Fever Hospital and House of Recovery, Cork street.* That parallel may be found traced at the eighth and twenty succeeding pages of the second part of my "Pathological Observations," published in 1829,† and still further extended in the Practical View of Ireland, published in 1831, by James Butler Bryan, Esq., Barrister at Law.‡

But other motives, which also influenced my previous efforts, induce me to renew them; namely, to promote a sounder Pathology than is likely to result from contests between exclusive Solidists and exclusive Hemoralists. Desirous, *as on previous occasions*, to draw the notice of Pathologists more closely to the constant connection which I observed as our epidemics have advanced to pestilence—between morbid changes in the blood, and debility or derangement of the vital functions—and to the important question, "Were these synchronous phenomena merely accidental, or were they ancillary?" Also, "How far were they mutually dependant at the beginning, and during the progress of disease?" Questions which have become, yearly, more and more interesting as successive systems have failed in generating a practice, effectual as it should be, in preventing and curing diseases. The comparative value of successive speculations too, during their temporary application to transient changes, can be best shown by placing them in the order in which one was proposed on the destruction of another; and the fitness of what remains of their *debris* for a more enduring structure can be more fully estimated. (Vid. note A, appendix.)§

Proud to acknowledge the aid which my former attempts similarly and arduously directed, met with on the Continent, (especially in a critique by Dr. Steinheim, in the Magazine of German Literature, and in Great Britain,‖ I beg to give the following extracts with that view, as well as in justification of myself, viz.:

"About forty years ago, (*Dr. Steinheim's Critique* continues,) "Cullen first advanced in Edinburgh the doctrine of Sthenia and As-"thenia; which had extended itself over Europe for half a century "under different names, and manifold shapes. Its intellectual course "passed two points of Culmination; the former in Brown, the latter "in Broussais. And now comes the second extinguishing blow from

* See Annual Reports from the Cork-st. Fever Hospital for 1806, 7, 11, and 16.

† See Pathological observations, part 1, Dub. 1823; part 2, Dub. 1829; and part 3, Dub. 1830.

‡ A Practical View of Ireland, by J. B. Bryan, Esq., 1831.

§ See a dissertation on the Institutes of Medicine, particularly relating to the Pathology of Fever.

‖ Med. Chirur. Review, new series, No. 1. 155. June, 1824; London Med. and Sur. Jour. Oct, and Nov. 1829; Med. Chir. Review, Sept. 1, 1820.

"a quarter near that from which the theory of Solids, as a first "flash of lightning, blasted the old fabric of the Pathology of Hu- "mours. A new, although not an unheard of appearance.

"This last meteor of the Solidists, whose elegy Doctor Stoker has "already sung in Ireland, will soon be extinguished.....

"It would be incredible how far almost all our fellow artists across "the sea suffered themselves to be enticed into that quagmire, the the- "ory of Solids, by the appearance of the solidity, as by an *ignis-* "*fatuus*, if their writings did not prove it. One may even see the "disjointedness of false explanation, and the wildness of their madly "forced applications at the bed of sickness. The adherents of the "pathology of humours were regarded with real pity, disdain, and "contempt; and the gestures of those persons are ridiculous, when "nature presents them with an inexplicable problem as a barrier on the "theoretical highway, and forces from them a reluctant acknowledg- "ment, (*un eveu arrachè par la verite*) as Broussais often expresses "himself against Ontologists.—*Pages* 35, 36, 37.....

".....Stoker now opposes himself to this physio-pathology of "his countrymen, and with the danger of having all that applied to "him, which was said against humoral pathology in modern times. "Every well-intentioned person will praise him for his courageous love "of truth. The manner in which he conducts his new doctrine "proves this at once, for he prepares and conducts the reader by prac- "tical cases as they occurred to himself. This method is certainly "practised by his countrymen, and is formed on the fundamental prin- "ciples of Locke, being peculiar to observers, who wish to deviate "but little from direct evidence, and retire quickly to it again."*— *Pages* 40, 41.

"The next part (continues Dr. Bostock), ('*Pathological Obser-* "*vations*,' Part 1, &c.) consists in observations on the connection "supposed to exist between the appearance of the buffy coat on blood, "and the time required for its coagulation. It is well known that pa- "thologists in general have looked upon this as a merely physical "operation, and have explained it by the slow coagulation of the "blood in the cases in which it presents itself, and by the time thus "allowed for the precipitation of the red globules. Dr. Stoker rejects "this explanation, as being incapable of being reconciled with the "results of actual observation. He has given a tabular view of the "state of the blood drawn from twenty-seven patients; the time re- "quired for its coagulation, with notices of the presence, or absence of "the buffy coat, &c. We do not think it necessary to transcribe "this, but shall contrast one or two of the cases which appear to fully "support the doctrine Dr. Stoker has advanced!!"†

The following remark of M. Duges on the creeds of the Solidists

* Magazen der Auslaudeschen Literatur der Gesammter Heelkunde, &c. &c., Von Dr. G. H. Gerson, and Dr. Nichol, Henri Julius, Juli, August, 1824, Art. 2. Pathological Observations, &c. &c., by William Stoker, M.D., 1824.— Translated by I. G. Abellshauser, Professor of Languages.

† Elementary system of Pathology by J. Bostock M.D.—London, 1727.

and Humoralists, *was* extracted for the Medico-Chirurgical Review; from the *Revieu Medicale, Mars.* 1824; that the reviewer of my Pathological Observations, might thus express his unqualified approbation of both: " Il ne serait pas moins de raisonnable d'adopter des idées " toutes contraires, et de nier les alterations du sang, ou de les croire " indifferentes aux phenomenes de la santè et de la vie. Un juste " milieu entre ces deux extremes est, sanse doute la veritable route a " suivre."

" Dr. STOKER (says the London Medical and Surgical Journal) has " drawn his conclusions from the best of all premises, from observations at " the bed-side of the sick, and he has found the present theories of CULLEN, BROWN, DARWIN, CLUTTERBUCK, MARCUS, PLOUQUET, BROUSSAIS, BRETANNEAU and others, all inadequate to their explanation. " The ardent admirers of necrotomy are now convinced of the inutility " of endeavouring to discover the causes of Febrile and other diseases, by the scalpel; and they are once more very rapidly returning " to the other modes of investigating the causes of these diseases, which " cannot be explained by localising them, or referring them to different " organs.—Dr. STOKER is the first writer in this country, who has " assailed the modern theories, and endeavoured to direct attention to " the condition of the fluids in disease."*

But I must conclude these extracts with another, by way of reference to Dr. William Pulteney Alison's " Outlines of Physiology and Pathology," as they ably support the difficult position which, though unknown, it seems, to this distinguished Pathologist, I have felt it my duty, *since the beginning of this century, to maintain* through evil report and through good report, and I would feel wholly inexcusable to shrink from it at this critical period.

The " moving powers of the animal economy," and especially the province of the Nervous System, (see Outlines of Physiology and Pathology,) in producing the phenomena of life, which were long neglected in certain Schools of Medicine, have been erroneously conceived in others; by Stahl, by Hoffman, by Cullen and Whytt, and to a certain degree by Bichat, by Legallois, and even by Dr. Wilson Philip; and were more accurately understood by Haller, than by any of these authors.

" Besides the misconceptions which seem to have prevailed, (continues Dr. Alison) and still prevail, among many physiologists, as to the essential condition of vital movements, and particularly to the influence of the nervous system, in determining these movements and their immediate effects; it seems now pretty generally admitted, that the influence of the truly vital properties of the blood, and other animal fluids, on many of the most important changes of the living body in health and disease, has been *until lately* very much overlooked. When these vital properties of the fluids are better ascertained, and their importance duly appreciated, there is every reason to believe that the distinction so often drawn in the schools of medicine between solidity and fluidity will be

* See Med.-Chir. Review, new series.—Edit. Edin. 1773, No. 1, June, 1824, p. 155.

effectually obliterated by the admission, that most diseases originate in that part of the system (the capillary vessels) where the animal solids and fluids are most intimately blended together, and are continually interchanging particles, and therefore necessarily extended to both."*

The early and terrific effects of the causes referred to in the introduction, appear in the synoptical tables of the Rev. James Whitelaw's Essay on the Population of Dublin. In 1798 (he states) there were in Dublin

	16,401 Houses, and	172,091	Inhabitants.
And in 1804, but	15,645 Houses, and but	167,899	ditto.
So that the return of 98 exceeded that of 1804, by	756 Houses, and	4,192	Inhabitants.

Now, if it is borne in mind that it was in 1798 Dr. Jenner published his "Enquiry into the Causes and Effects of the Variolæ Vaccinæ," and that his recommendation of infection with that virus has been since very generally adopted in Ireland, and its beneficial effects as widely extended, it follows necessarily from this singular depopulation of Dublin since, notwithstanding the most fatal of epidemics, had been thus arrested, that other epidemics must have become more general and malignant. Besides, this valuable addition to prophylactic medicine, there was simultaneously in operation in Dublin the most extensive apparatus in the British dominions for checking the progress of contagion. The sources of malaria too, and hence of ague, were nearly removed. This, I conceive, imperatively calls for a closer investigation into the causes of disease, not alone by the faculty, but the community. The public safety at least would be thus promoted. It is now quite clear that evident causes have either been overlooked in contriving preventive, and remedial measures, or that they have overwhelmed the inadequate means in use.

The type of epidemic fevers at the close of the last and beginning of this century, was in most cases very nearly described in Dr. Cullen's definition. "Febres sine intermissione nec miasmate paludum ortæ; sed cum remissionibus et execerbetionibus, parum licet notabilibus, perstantes paroxysmis quovis die binis. The diurnal paroxysms, however, distinguished them less every year, as the sources of malaria were dried up, and perhaps, too, as famine, mental depression, and consequent pestilence, assisted to obliterate the vital energy or efforts (*Conamina*, as Sydenham calls them) to repel the encroachments of disease, struggles on which these phenomena in some measure depend. These struggles, I remember, were pointed out to us, who were his pupils, in 1796, by Dr. Perceval, in his lectures on the cases admitted into the clinical wards here, and afterwards in the Edinburgh Hospital, in the years 1797 and 1798, by Drs. Gregory and Rutherford; and notwith-

* Outlines of Physiology and Pathology, Lon. 1833. By William Pulteney Alison, M.D., F.R.S., Fellow of the Royal College of Physicians, and Professor of the Institutes of Medicine in the University of Edinburgh; preface, pag. viii. ix.

standing a more rapid growth of disease for several years before, the cases then did not differ materially in their external character, nor essentially in their nature from those described at a much earlier period of the 18th century by Drs. Boate, Rogers and Maurice O'Connell.* At these periods, it appears too, as continued fevers became more typhoid than inflammatory, symptoms of debility in the functions, with corresponding lesions in the circulating mass supervened. Reaction, however, was better marked by increased force and velocity in the pulse, and higher degree of temperature at the close of the last, and beginning of this century. It was also more frequent at the commencement of diseases than since, and in mixed cases continued through a more considerable portion of the disease. The prevailing fever was very generally denominated Synochus. Dr. Cullen's definition of that species, however, was not wholly unobjectionable; for *synocha* or the *cauma* of Dr. Mason Good, was then, as since, a very rare occurrence; but if *pyrexia* be substituted for *synocha*, it would in many cases be found admirably suited to the mixed fevers that prevailed; and in many still more so, if rendered thus—*Phlogosis initio et versus finem Typhus.*†

Continued fevers, however, of any species, could neither have been so prevalent nor so severe before as since the beginning of this century, no hospital being expressly provided for their prevention and cure in Dublin before 1803. And that, notwithstanding the subsequent increase in extent and aggravation of symptoms, no changes in their nature or essential characters had then taken place, will appear more clearly by comparing the reports published from the fever hospitals of Great Britain and Ireland at the commencement of this, with the descriptions in the first and second quarters of the last century, already referred to.

The principles and practice adopted in the treatment of fever at that period were very generally founded on Boerhaave's System of Pathology, or, more properly speaking, on the same eclectic plan as his system—that is, upon the rational opinions of others, whether antecedent or contemporary, connected together so as to mould them into a consistent and uniform theory. Consequently, morbid changes in the vital fluids, and morbid actions in the living solids, in whatever degrees they were found conjointly or reciprocally affected, were duly studied and promptly prescribed for, without fruitless enquiry into the *primum functum saliens*, or *postremo moriens*, and with still less hesitation preferring alopathy to homopathy.

In intermitting fevers emetics were employed on the supervention of the rigors, to relieve the oppression at the stomach, and because spontaneous or excited vomiting had been noticed previously to abate or shorten them. In the intervals, costiveness having been observed to render the succeeding paroxysms more severe and accidental purging beneficial, laxitives were always directed for the due evacuation of the

* An Essay on Epidemic diseases, by Joseph Rogers, M.D.—Morborum acutirum et chronicorum quorumdam observationes. Auctore, Mauritio O'Connell, M.D.

bowels; but Peruvian bark was directed still more empirically, and, as at present, when not contra-indicated, was employed at all stages of the disease.*

Continued fevers were treated upon nearly the same principles, and according to the most obvious indications, whether the signs were observed in either fluids or solids, or in both. In dynamic or inflammatory fevers, means especially general and local bleeding, were employed proportionately to the increased strength and velocity of the pulse, the pain of the part affected, and the derangement of the function most engaged; the prescriber being guided by the external character of the blood taken from a vein, or accidentally effused. If the crassamentum was firm, colour not darker than natural, and surface sizy, the evacuation was continued or repeated, as otherwise seemed necessary for the patient's relief; but if these indications were wanting, remedies likely to be successful, without detracting so much from vital power, were prescribed.†

On the treatment of adynamic or typhoid fevers at the period under consideration, reserving a more complete catalogue of remedies, selected with that view, until epidemics became more pestilential, and when the contrary indications to those in dynamic fevers became better marked—a few remarks here, and chiefly on the adaptation to transient changes of disease. (e. g.) Purgatives *were very generally resorted to soon after Dr. John Hamilton's able treatise in* 1798, but were for some time much abused, owing, chiefly, to neglect of his salutary cautions. The growing malignity of epidemics, however, in some measure demonstrated the extent of these abuses, and therefore led to a more guarded and less frequent administration of purgative medicines, in the treatment of febrile diseases, and to confine them strictly to the due evacuation of the intestines. Dr. Hamilton's predilections in favour of purgative medicines, however, were so strong as to lead him to oppose other remedies. Owing to his high authority, he in some measure proscribed sudorifics, more particularly antimonials. Having contributed my aid to prevent the abuse of purgative medicines adverted to, by republishing Dr. Hamilton's cautions, and by publishing some cases of mixed fever, in which James's powders, especially where the head was affected, and others in which tactarized antimony was eminently useful, to restore antimonials to their due rank in the *Materia Medica,* I am the more desirous, on an occasion like the present to refer to adjustments in the practice of physic which have been crowned with success.‡

Warm or cold affusion, as recommended by Dr. Currie was much employed at that time, if the circumstances he pointed out, namely, if vigorous reaction and high temperature justified it. These indications however, as diseases became more pestilential in the same degree, be-

* See Annual Reports from the Cork-street hospital, for the years 1806, 7, and 11. By Wm. Stoker, M.D.

† Dublin Medical and Physical Essays, 1805.

‡ Treatise on Purgative Medicines, by J. Hamilton, M.D. Edinburgh, 1799.

came less and less observable.* This, as well as the consequent disuse of that remedy will be seen more clearly in the sequel. In mixed cases of fever, when inflammatory and typhoid symptoms, as often happened, were intimately blended, it was of the highest importance to have a remedy not contraindicated by either, yet consistent with the *ratio medendi* in both—and barm or yeast, on account of some reports of its efficacy in putrid fevers, as tried by the Rev. Dr. Harwood and then published by the lamented Dr. Beddoes, seemed to me to promise favourably. The results of the extensive trial I had made among the sick poor of the Dublin General Dispensary, being decisive, I stated them in 1800, to Dr. Whitley Stokes, then a Fellow of Trinity College, and Professor of the Practice of Physic; and on reviewing the general and beneficial adoption of this remedy since, I trust I may be excused in adding, that I was the first physician who gave it an extensive trial and published the cases thus remedied.†

The principles and practice then generally taught in the public lectures, and adopted by the classes, though founded, as stated, on the eclectic method, and Hippocratean doctrines, were soon after as violently opposed as the most restrictive and arbitrary that preceded them; but the questions most constantly agitated were chiefly between those who held opposite sides with the rival systems of exclusive solidism and humoralism. Still, however the contending parties might affect to be wholly directed by Lord Bacon's method of induction from facts, or by avoiding errors they pretended to have thus detected, they continued to be guided in secret to a later period by a mixed pathology, based alike on morbid changes in the vital fluids, living solids, and some uninfluenced by either theory, prescribed remedies, wholly because they had been employed with advantage for similar symptoms.

The failure of the attempts to establish consistent theories on any exclusive system of pathology will become more manifest as we proceed with this sketch, as well as the idle vanity of disputes on the *prima et sola seles morbi*, which have likewise retarded the improvement of the practice of physic. Morbid actions in the solids and morbid changes in the fluids were duly noticed, and were examined through the entire course of disease, without respect to the particular system in which they commenced. The nature of the disease and the means of relieving it were thus sufficiently ascertained for safe practice.

In thus, for the present, briefly touching on my objections to exclusive Solidism, I mean to advocate the great advantages from unrestricted autopsy, before and after death, and should observe that Stethoscopy was not wholly unknown to the practitioners of Dublin, that auscultation, unaided by an intermediate apparatus, was then found beneficial in exploring the morbid contents of the natural cavities, particularly of the thorax. It was practiced in 1796 by Dr. Perceval in the Clinical Hospital, and

* Essay on Cold Affusion in Fever, by Dr. James Currie, of Liverpool.

† Dublin Medical and Physical Essays, 1805. Transactions of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians, vol, 1, Dublin, 1817.

by the late Dr. Wright in the Meath-street Dispensary. Neither were the advantages common to it and Cranioscopy neglected—such I mean as examining the external deformities of structure on the surface of the head, chest, and abdomen, and comparing them with the natural inequalities on these surfaces, so as to ascertain whether or not these were the result of morbid changes in the solids.

Autopsy, however, was not then limited to mere alterations of structure, either during the course of disease, or after death, but both here and in Edinburgh, was extended to morbid changes in the fluids. In 1797 and 8, I witnessed in the Edinburgh hospitals the great advantages of such modes of enquiry into the nature of diseases, directed by Drs. Gregory, Rutherford, Hamilton, &c., whose accurate diagnoses, prognoses, and successful treatment must be recollected; likewise, how cautiously these eminent physicians noticed morbid changes in the fluids.

As the principles and practice just described nearly resemble those most generally adopted by the Faculty during the succeeding years of this section; in following the progress of disease it will be only sufficient in that entire period, to notice the theories by which these principles were assailed, or the modifications of practice which alterations in the characteristics of disease rendered indispensable.

The description of the progressive increase of febrile and pestilential diseases in Dublin, I am about to offer, is taken for the most part from the annals of the Fever Hospital and House of Recovery, Cork-street, since it opened for the reception of patients in 1803. By the number of patients admitted into that Institution each year, till 1817, when other fever hospitals were established, the rise or decline of disease may therefore in some degree be calculated, and by the average mortality, the only medical statistics in the Irish metropolis, its mildness or malignity may in the same degree be measured.

The first Fever Hospital in Dublin was opened in Cork-street, in the year 1803, and was then confined to the destitute poor, labouring under contagious fever, in the five parishes of St. James, St. Catherine, St. Audeon, St. Luke, St. Nicholas Without, and part of St. Nicholas Within, of St. John's, and of St. Peter's. The number admitted that year was 415—of these 29 died—the average mortality being one in 14 $\frac{9}{27}$. In 1805, the hospital district, during the last eight months, including all the city on the south side of the Circular-road, the admissions were 1024, and the deaths 67,—average mortality, one in 15 $\frac{19}{67}$. Evidence of the agency of miasm arising from the bodies of the sick, and of malaria from adjacent marshes, was stated in the Medical Report of that year, founded on the communication of fever through families, and the frequency of diurnal paroxysms and septenary crises. (See reports for the years 1804 and 5.) In 1806 the admissions from the south side of the Circular-road were 1264, and the deaths 103,—average mortality 1 in 12 $\frac{28}{103}$.

In 1807, though female servants and cases of scarlatina, which were not previously admissible, were then received, yet a diminution of fever appears to have been effected in the district; but owing to a more malignant character of the epidemic at that time, the average mortality increased. The numbers admitted were 1100, deaths 92 : average mortality was, 1 in 11 $\frac{88}{92}$. From the medical report of that year, it appears that scarlatina prevailed very generally amongst those who did not enjoy the immunity given by a previous attack, and that *Cynanche Tonsillaris* very generally, and *Cynanche maligna* frequently was noticed amongst others who did. The apothecary and assistant were severely attacked, and it was then, for the first time, proposed to the managing committee, by the physicians, to have separate carriages and separate wards for the malignant cases. It however, should be stated, that no farther bad consequences arose from free admission of all forms of the epidemics into the wards (see Medical report for the year 1807.*)

It was in 1807 I instituted those experiments on the blood in the vena porta and cava, which I afterwards published with a view to the validity of an opinion I had expressed in 1797, to Dr. J. Bastock, and other associates, of the medical society of Edinburgh, as to the use of the hepatic, and of the pulmonary system, in preparing the blood in its passage from the greater circulation, to re-enter it for its purposes in the animal œconomy. The changes of colour, and consistency of the circulating mass, which I thus found effected by chemical affinities, subtending to vital power, were afterwards more clearly demonstrated by the experiments of Drs. Prevost and Dumas of Geneva. They guided me chiefly to those distinct characteristics of inflammation in the different Parenchymatous viscera of the abdomen and thorax, which I afterwards recommended, in my annual reports from the fever hospital, in my treatise on fever, published 1814, and in each volume of my Pathological Observations, as diagnostics between functional diseases of these cavities. The practical utility of these physiological and pathological observations appearing to me likely to be more fully appreciated, as the results of the late Mr. Thackery's observations on the blood, in various parts of the sanguiferous system, recently published by Dr. Wright of London, become better known, I am the more desirous to refer to them on the present occasion. (See Appendix Note B.)

In 1808, the efficacy of the fever hospital became still more manifest, and both encouraged and enabled the physicians to recommend its extension over the whole city within the Circular-road. The number of those admitted this year under that arrangement was 1071, and the number who died 94 : average mortality, one in 11 $\frac{37}{94}$.† In 1809, a further decline of fever enabled the managing committee to admit applicants of every grade of society in Dublin labouring under fever. It was also very remarkable, that as continued fever declined, that year, ague as much more prevailed, particularly in the spring months.

* See Medical Report of the Cork-street Fever Hospital, for the year 1807. By Wm. Stoker, M.D.

See Medical Report for the year 1808. By George Hagan, M.D.

The total number admitted in 1809, (of whom a large proportion laboured under intermittents), were 1051, and 83 died. Average mortality, one in 12 $\frac{61}{83}$.*

In 1810, the condition of the working classes being further deteriorated, partly by the cheapness of ardent spirits, but chiefly by want of employment, and that of the middle classes from want of trade (see Medical Report for that year), a remarkable revolution in the external character and nature of epidemics took place. Fevers became more typhoid or pestilential than had been before observed. The prominent symptoms were those of debility, marked by feebleness of the pulse and coldness of skin, such as had not been previously observed, and they were accompanied by corresponding alterations in the external characters of the blood, which, instead of being firmly coagulated and sizy on the surface, as happened before, at least at the commencement of the disease, was seldom so at any stage of it. This was stated in my report of that year; and also that crises and septenary movements, still continued. It appears also in the report of that year, that even then the aggravation of symptoms led to the question of late years so vital—whether or not a new disease, *sui generis*, had been generated here or imported from abroad? The number admitted greatly exceeded that from the same district in the preceding year, and the number of deaths was nearly double, viz.: admitted, 1774; died, 154: average mortality, one in 11 $\frac{40}{77}$.†

In 1811, there was another decline of disease, seemingly also connected with a corresponding improvement in the condition of the working classes and in trade, and partly, perhaps, with a check to disease given by the Cork-street hospital. The numbers admitted, from the whole city, were 1472, less by 302 than the preceding year. The deaths amounted to 115, or 1 in 12 $\frac{91}{113}$, a smaller average mortality than in the preceding year.

In 1812, the malignant type of distempers which first appeared in 1810, again apparently, under a repetition of similar causes recommenced; and notwithstanding the reduction of the numbers admitted in the preceding year, increased to 2265, additional accommodation being provided at the Cork-street hospital to meet the pressure. There was not, however, an increased average of mortality, the deaths being 166, or 1 in 13 $\frac{107}{166}$ admissions.

In 1813 the numbers affected by distempers of nearly the same type as that of 1810, further increased; but whether owing to a more appropriate treatment in mixed cases and in distinct forms of typhoid and inflammatory disease, successfully adopted, chiefly according to the indications afforded by morbid actions, and co-existing alterations in the external characters of the blood, already intimated when treating on the pestilence of 1810, or to earlier application for admission, or to both these causes combined, the mortality in the Cork-street hospital was in

* See Medical Report for 1809. By Francis Bucher, M.D.
† See Medical Report for the year 1810. By Richard Gamble, M.D.

1813 less than in the preceding year. The number admitted was 2627, deaths 164,—average mortality 1 in $16\frac{3}{164}$.

In reviewing this lessening average mortality of the prevailing fever since 1810, it should be noticed that a comparative trial was made in that year, of small bleedings in all cases of epidemic fever, on the principles of Drs. Clutterbuck and Broussais, and adopted by Dr. Mills—then one of the Physicians to the Cork-street hospital—and of not bleeding except for obvious symptoms of internal inflammation according to opposite principles maintained by the other Physicians of that Institution. The result of this truly important trial was given in tables, which were annexed to a letter first addressed by my colleagues, Drs. Barker, Hagan, and Gamble, and myself, to the Managing Committee, afterwards published in the Edinburgh Medical and Surgical Journal, No. 40, and subsequently appended to my Treatise on Fever, published in London, 1814. These tables are too extensive for insertion in this sketch. The following is a reference to them :—

In col. 1, were the different months of Dr. Mills's attendance. In col. 2, all the patients, male or female, treated by him, together with the event, whether successful or otherwise; and on the same lines in col. 3, a similar statement of all the patients treated by the other Physicians during the same months; to save the trouble of calculation, the proportion of deaths to recoveries in each month, among the patients of different sexes, treated by Dr. Mills and the other Physicians, was given in col. 4; underneath the total result is given; and thus the reader could, by inspection, determine the merits of the different modes of practice, as it affected the proportional number of deaths during the whole or different periods of Dr. Mills' attendance.

It appeared, as the final result, that amongst the patients treated by blood-letting, the proportion of deaths to recoveries was as one to $11\frac{40}{51}$, and amongst those treated according to the more ordinary methods as 1 in $12\frac{101}{110}$, a proportion differing from the former in no small degree, and justifying the conclusion, that the treatment of fever, by small and repeated general detractions of blood, was either of little efficacy or injurious.

It must add to the weight of the above conclusions to observe, that the data on which they depend had been furnished from the most authentic sources, namely, the diet tables, in which each Physician enters daily the patient's diet, and at the same time registers the date of admission and dismissal, the time of remaining in the different wards, along with the final event of each case; and the different parts of the system being so contrived as to check each other, an error in the tables can scarcely exist without detection.

In 1814 the great importance of the above enquiry became still more obvious, and the absurdity of the doctrine of inflammation being the proximate cause of the typhoid epidemic distempers then prevailing, which was attempted to be established chiefly on appearances found after death; hence too, was proved the necessity of treating inflammatory fevers, or those symptomatic of inflammation, in a different manner from typhoid and other diseases symptomatic of debility. The distinguishing characters of each as well as of the morbid actions and changes in the

vital fluids became then also more manifest. These circumstances, as stated in the preface, led to my Treatise on Fever, published in London, 1814, and as that was a faithful transcript of facts, I can now refer to it in support of opinions which all my subsequent experience has tended to fortify ; that inflammation is not only distinct from, but opposite to either typhoid or any other disease symptomatic of debility. however, it may sometimes be combined with, or modify them Longer, and more experience than falls to the lot of most men, will, I trust, plead my excuse for maintaining my position at a time when I believe it is very necessary for preserving the *juste milieu* between exclusive humoralism on the one hand, and exclusive solidism on the other, which, like other equally exclusive doctrines, have, I believe, more than any other cause, retarded the advance of medical science during the period embraced in this sketch, and even, I am persuaded, perverted it so far from its first design, as on some occasions to become, instead of the most beneficial, the most destructive of human inventions. The number of admissions into the Cork-street Fever Hospital, in 1814, was 2329, the deaths 143 : average mortality, 1 in $16\frac{3}{164}$ admissions. This year's result, too, afforded evidence in favour of the opinion that idiopathic and symptomatic fevers are distinct in their nature, for it was on these principles that the cases in the hospital were then treated, more especially as respected bleeding. As diseases became more pestilential, however, the advantages of still greater caution, more especially as regards artereotomy than those expressed in my treatise, in 1814, became obvious. (Appendix, Note C.)

Besides the evidence afforded by the experiments above detailed, of the distinctness of inflammatory fever, and typhoid disease, and of the necessity of different modes of treatment, it was fully ascertained, that epidemics at that time preserved more than since of the aguish characters which often designate idiopathic fevers.

The following table, constructed with that view, assists too, to confirm the opinions of some of the best medical writers, that there is a tendency in fever to terminate favourably or unfavourably on particular days :—

On Days of Fever.	No. of Cases.	On Days of Fever.	No. of Cases.
Second,	2	Eighteenth	30
Third,	16	Nineteenth	35
Fourth	45	Twentieth	20
Fifth	129	Twenty-first	17
Sixth	117	Twenty-second	11
Seventh	262	Twenty third	8
Eighth	173	Twenty-fourth	0
Ninth	212	Twenty-fifth	6
Tenth	118	Twenty-sixth	0
Eleventh	117	Twenty-seventh	0
Twelfth	121	Twenty-eighth	4
Thirteenth	82	Twenty-ninth	0
Fourteenth	79	Thirtieth	0
Fifteenth	74	Thirty-first	2
Sixteenth	51		
Seventeenth	42	Total	1,773.

Those crises had been marked from the day of attack to that of marked decline of the symptoms, or entire cessation of fever (and it may be observed that the greatest number of crises occurred very nearly on the days originally stated by Hippocrates, viz.: 3rd, 5th, 7th, 9th, 12th, and afterwards on septenary days); these periods were often so very remarkable in hospitals, that I have frequently seen patients who, at the ordinary mid-day visit, were hot, restless, anxious, and depressed, with hurried breathing, nausea, and quick pulse, on the succeeding morning tranquil, and without complaint, with all the vital functions regular, and the appetite keen. This change was frequently accompanied with some increased evacuation, vicarious discharge, external or glandular tumour or eruption on the skin; it sometimes followed the removal of some local irritation, as that of a lumbicus from the stomach by vomiting, an occurrence I have often noticed in the hospitals. Crises were more remarkable in those fevers which terminated before the tenth day, and in fever, uncombined with organic disease, or local inflammation; and this will explain why they were less noticed among the affluent than among those generally admitted into hospitals; in the former class, fever being often combined with, and protracted by organic derangement. Dr. Perceval stated to me at that time, that he observed septenary critical movement in the continued fevers of those of the upper ranks of life, yet he scarcely ever saw them succeeded by a complete apyrexia. In cases of idiopathic fever, convalescence frequently took place on the night after admission to the hospital (if that was on the 5th, 7th, or 9th from the attack), or on the next succeeding to it, if on either of the intervening days; in these instances cleanliness, and removal from the action of foul and contagious air alone, giving free exertion to the operations of nature. It may be further observed, with respect to the foregoing table of critical days, that the phenomena which it exhibits as having occurred in this country, corresponded exactly with what Dr. Francis Balfour had noticed in India and the east of Europe, and that he copied it with gratifying expressions of his approval, as additional evidence in favour of his principles, into his treatise on Sol-lunar influence published at Cupar, in Scotland, A.D. 1816.

In 1815, those diurnal movements, which previously gave to idiopathic fevers more or less of a remittent or intermittent form, became less distinguishable, and the distinctness of continued fever into symptomatic and idiopathic, and into inflammatory, and typhoid disease, became still more manifest, so that appropriate treatment for each could be better prescribed. On this account, it was, I believe, chiefly, that notwithstanding the numbers admitted greatly exceeded those of any preceding years, yet the mortality in the hospital was greatly diminished. There were other circumstances, however, that year, which I am sure assisted these favourable results, such as opening a new building with much larger wards than those in the old (see my report for that year), so as to increase the number of beds from 80 to 180. Besides there was earlier application and increased confidence in the means employed. The number of patients admitted this year from the whole of

the city within the Circular-road, amounted to 3,789, of whom 187 died, consequently, the average mortality was only one in 20 $\frac{47}{187}$ admissions.* (Appendix, Note D.)

The year 1816, though so constantly cold and rainy as to destroy the sown corn and rising crops to a degree that led to famine and pestilence throughout Ireland in the two succeeding years, was itself remarkably free from both. This plenty and healthfulness were observed also over the whole of Europe. The admissions into the Cork-street hospital from the same district as in the preceding year were less by 1086, viz.: admitted 2703, deaths 173 ;average mortality, one in $15\frac{108}{173}$ admissions. The increase of the average mortality from the preceding year, arose chiefly from the admission of patients labouring under phthisis and dropsy, into the wards which would otherwise have been vacant. This frequency of phthisis, when epidemics do not prevail or are prevented, (e.g.) small-pox by Vaccination, fully accords like the alternation of ague and continued fever in the years 1808 and 9, with the opinion long received, that many congenite diseases, which do not arrive at their acme before puberty, have their fatal ravages anticipated by prevailing and malignant epidemics.†

Previously to entering upon a description of the year 1817, when famine, and supervening pestilence, combined to extend and aggravate the epidemics of Ireland in an extraordinary manner, a brief description of the prevailing forms of diseases immediately before that time may assist to better understanding the frightful increase and aggravation that occurred afterwards. The fever was still the Synochus of Dr. Cullen, with the alterations in his definition proposed at the beginning of this section, I mean, by the substitution of Pyrexia and Phlogosis, occasionally for Synocha, and for the Cauma of Dr. Good. Dynamic or inflammatory and adynamic or typhoid fevers, were constantly presenting themselves together, but in different degrees in the same patient. Typhus fever seldom preceded, but often supervened on inflammation. Local inflammation was sometimes kindled in the course of typhus disease, but more frequently after either a favourable or unfavourable crisis. Typhus fever too, often supervened on, or rather superseded inflammatory, and chronic affections of the brain, the lungs, liver, and other vital organs, to which the labouring classes in this, as in other large cities, are much predisposed. The influence of seasons on these combinations was manifest, and very similar in successive years. The connection between symptoms, and sudden changes in the weather was very obvious. In winter pectoral and hepatic affections, and sometimes bowel complaints from the preceding autumn, rendered continued fevers more difficult of cure. In spring typhoid symptoms became less, and inflammatory affections more frequent, the lungs being most generally engaged. In some years, early in this century, however, a malignant influenza prevailed to obliterate that reaction which generally marked the Vernal season. On such occasions corresponding changes in the blood to those which occur

* See Medical Report for the year 1815. By G. Hagan, M.D.
† See Medical Report for 1816. By Wm. Stoker, M.D.

in typhoid fever, warned physicians of experience to be cautious in the abstraction of blood. (Appendix Note E.)

The same treatment for the "*Stitches*," as they denominated the prevailing distemper on these occasions, especially as regarded bloodletting, was not prescribed as for ordinary inflammation of the lungs. In summer, epidemics became more typhoid, the head being most generally engaged; the same corresponding changes in the blood contraindicating its abstraction; the biliary system too, was much affected. In autumn the typhoid type of disease, became in general more urgent than in summer, and in some years gave a more pestilential character to prevailing diseases. These effects of season, however, and their malign influence on the epidemic constitution of the air, were aggravated by predisposition from other causes both moral and physical, (e. g.) In 1813 a very fatal epidemic was propagated through Ireland by such combination of causes. Its most alarming symptoms were sudden prostration of strength, discoloration of the skin, and diminished temperature, congestion in, or excessive hemorrages from the bowels, and alternately, with these Coma, sometimes *Delirium Tremens*, putrid Peripneumony, extensive dark Petechiæ with Ecchymoses, and bubonic tumours. The broken-down crassamentum, and the dark colour of the blood, drawn or effused, before or after death, corresponded also with these symptoms of pestilence.*

Referring again to my annual reports, and my Treatise on Fever, published 1815, for a fuller description of the prevailing medical theories and practice at that time, than would be compatible with the limits of this sketch, it must suffice for the present to state, that a rational empiricism was still very generally adopted, though modified by the eclectic Pathology of Boerhaave and Haller, and subsequently by the ingenious theories of Baglivi, Cullen, Darwin, and Browne. Hence, though changes were carefully noted in the quality and quantity of the vital fluids and morbid actions in the solids, still the Hypotheses of accumulation or exhaustion of excitability had their influence. These modified theories, however, were afterwards generally rejected, when signs of previous inflammation were said to be so frequently detected after death, as to justify the opinion that the proximate cause of epidemic and pestilential diseases had been thus discovered, and that the *ratio symptomatum*, and the *ratio medendi* might also be explained by that circumstance alone. The *post mortem* examinations, however, previously published by Dr. Beddoes, and all my own experience afterwards in autopsy of diseased fluids before, and of diseased solids after death, led me to question the ultra-phlegmasisism which was the result of such partial enquiries. In my Treatise on Fever, moreover, I stated numerous cases to prove that though signs of inflammation were often to be met with, yet that they were not always found, on examination after death, whilst autopsy before death seemed to show that even

* In adapting modes of treatment during this transition of febrile to more pestilential diseases; besides discontinuing arterotomy, the substitution of leeches *circa anum*, and blisters to the region of the liver were decidedly beneficial.

when signs of inflammation were afterwards found, they were rather adventitious than essential; and so far from being connected with the origin of the disease, they had in some cases supervened even at a late stage of it. In corroboration of the veracity of these statements and of such as I had previously made with the same view in my annual reports from the Cork-street hospital, the records regularly kept at that Institution may be also referred to.

The aids which I received on those occasions from some of the most distinguished members of the different departments of medicine were such as deserve my grateful acknowledgments; and though I cannot here state them as fully as I wish, the following instances should not be omitted. Large and general bleeding in Typhus and in mixed fevers being recommended by some who entertained the new doctrines, because a few examples were adduced when patients did not die under that practice, Drs. Purcell, Perceval, Plunket, and Harvey, who always opposed such practice met the arguments in favor of it by repeating the aphorism of their preceptor Dr. Cleghorn, when told of patients surviving monstrous doses of poisonous drugs, "That it is sometimes hard to kill a man." On the subject of small bleedings indiscriminately in fevers, Surgeons Richards, Crampton, Colles, Carmichael, and Wilmot observed that inflammation which produced such morbid actions were not likely to be relieved by the abstraction of two or three ounces of blood; whilst Dr. Kirby, Dr. Macartney, and other anatomists further stated that the appearances found on the bodies of those who died of Typhus were not those of inflammation but the contrary. And Mr. Daniel Moore, an emiment Apothecary, was opposed to either large or small bleedings whenever the blood, as in Typhus disease, did not coagulate firmly, and was without sizy surface; he said it was contrary to what he saw successfully pursued by his distinguished contemporaries, Drs. Barry, Hutchison, Quin, Plunket, and Harvey. The ultra phlegmasiasm of 1814, is now, it is true, generally disclaimed by most professors, but so long as any physician of eminence affirms that "fever is one and indivisible," and others lean towards the term "Typhitis," for denominating pestilential diseases, and to the significant termination *itis*, thus to express the combinations of malignant distempers that now prevail, so long, the question must be deemed one of vital interest by every conscientious practitioner of medicine.

It may be useful to observe, previous to more practical details, that I adopt the term "Idiopathic," according to its general acceptation, to distinguish between fevers not produced by other diseases, and those which are obviously symptomatic. This division is objectionable, perhaps, in a mere systematic arrangement, but often found of much practical utility, by dividing the typhous and contagious diseases from the Phlegmasiæ so frequently combined with them in certain seasons, and under unfavourable circumstances predisposing to them.

The benefit derived by patients labouriug under Idiopathic fever from cleanliness, ventilation, cool regimen, and plentiful dilution was

then generally agreed on. Even the knowledge of these important steps in the cure of fever had been the slowly acquired result of scientific research and patient observation, in opposition to long-existing prejudices.

The other remedies then recommended by experience might be arranged according to their value,* viz.:

Purgatives	Yeast or Barm	Cold or tepid Affusion
Topical bleeding	Wine	Blisters
Antimonial powders	Emetics	

Blood-letting had not been adopted as a remedy for typhus fever, though from the occurrence of cases in which it was indispensable on account of the combination of pulmonic inflammation, there had been frequent opportunities of judging of its efficacy; but such were its effects upon the typhoid symptoms, that the similar urgency of active inflammation could alone justify further experiments with that remedy. If, indeed, the inflammatory diathesis impeded any important function, or threatened the destruction of the organization of a vital part, and thus became the paramount consideration; it was opposed by the only effectual remedy, the proportionate employment of the lancet, but with much greater caution, however, than in cases of pure phlegmasia, for in whatever degree the symptoms of typhus attended, those of deblily may be expected. If the pulse in such cases be constantly examined during the operation it would be found very differently affected by the same evacuation in inflammation merely. After the abstraction of the first two or three ounces of blood, which generally hurries the circulation, probably from the alarm of the patient, the pulse sometimes quickly becomes small or rebounding, and in either case denotes impending weakness. In typhus, too, the pulse is more affected by the motion of the patient, and I have known cases in which it was excited twenty beats in the minute by sitting up, and in others in which it fell as many by turning from the back on the left side

The appearance of the blood drawn is also different, for though that taken in the first cup be slightly buffed, it rarely continues so in successive ones; on the contrary, soon after it is drawn, the crassamentum becomes dissolved or broken into fragments, tinging the serum with its colour, sometimes of a very dark brown, and sometimes of a greenish hue. The distinct and opposite consequences of these distinct and opposite states of the circulating mass, are no less remarkable and decisive. Increased vascular action and higher temperature being attendant on buffed blood, whilst weakness and failure of the pulse, and diminished warmth of the surface, and of the breath, as closely waited on dark-coloured and infirm blood. That which was most firm, coagulated and sizy, being also generally succeeded by tumour and suppuration; but clotted and grumous blood by the speedy destruction of the part, external or internal, or by malignant pestilential tumours. Besides the morbid appearances of the blood at this time not only in-

* See my Treatise on Fever. London, 1814.

dicated such distinctions between idiopathic and symptomatic disease, by its colour and relative degrees of siziness, but also by the shades of colour, aid was given to distinguish between the separate diseases of the principal viscera in the cavities of the thorax and the abdomen. These facts may be seen more fully detailed in my Pathological Observations, and also cases to exemplify, as well as experiments I afterwards instituted to illustrate their application in the diagnoses and treatment of disease. (See Appendix, Note G.)

It is probable that much of the violent opposition among medical authorities on this subject, would have been reconciled if all the circumstances under which blood-letting had been used were attended to; thus it might have been effectual in epidemics produced by sudden changes of the weather in particular situations, such being mostly inflammatory. It seems probable, that the fever partook of that form for which bleeding was recommended by Sydenham, Munro, Huxham and Pringle, and more lately by Borthwick; for they in general justified its use by the degree of inflammatory disease, designated by morbid action and sizy blood. That, however, it would be found not only inexpedient for the cure of typhoid fever, when uncombined with inflammation, as then happened more frequently every successive year, but prejudicial, is consonant with the views taken by the ablest writers of the past, and by the most experienced practitioners of this century. The comparative trial of small bleedings, made in 1810, already referred to, was decidedly unfavourable to that practice, and the black sloughing ulcers, which resulted from the puncture of a lancet in the veins, and still more so in the arteries, rendered it still more objectionable.*

In concluding this section on the growth of disease and pestilence during the period it embraces, it may be useful to observe, in connection with contemporary events, that it appears from a carefully constructed table of admissions to, and deaths in the Cork-street Fever Hospital, that the most remarkable increase of admissions was in the years 1806, 1810, and 1815, and that it was in the years 1807, 1808, and 1810, that the average mortality increased most remarkably. That at the conclusion of 1816, however, owing to the diminution of mortality each year, from 1810, under the treatment then adopted, the mortality was reduced nearly to that which took place the first three years after the opening of the institution and before the increased fatality of 1807. But these facts, however important they may be with respect to this section, will be found still more so, when viewed in connection with the details next to be entered on. On both accounts, the

* The results of the comparative trials of indiscriminate bleeding in mixed fever, and only when signs of inflammation were manifest, would have been obviously far more decisive, had all the cases of the latter description been separated. Such a separation was attempted by myself; but owing to the difficulty of it, and the pressure of other avocations, it was abandoned.

following table affords, I think, a suitable link between the former and latter period included in this and the next section :—

Years.	Admitted.	Died.	Mortality.
1804	415	29	1 in $14\frac{9}{29}$
1806	1264	103	1 in $12\frac{28}{103}$
1810	1774	155	1 in $11\frac{40}{79}$
1816	2703	173	1 in $15\frac{217}{283}$
Total in twelve years, to 1816 inclusive.	22884	1570	1 in $14\frac{904}{1570}$

This table exhibits the numbers admitted, the relative numbers who died, and the average mortality in the years 1804, 1806, 1810, and 1816, and lastly, for the first twelve years from the opening of the Cork-street House of Recovery.

SECTION II.

Period from 1817 *to* 1834.—*Increase of disease and famine, simultaneous, and equally prevalent over Ireland in* 1817, 1818, *and* 1819. *Type till* 1822, *the same as in the preceding years of the* 19*th; and from the history left by others as in corresponding years of the* 18*th century. The cases being, until* 1822, *febrile—sometimes symptomatic of inflammation, at others proved by morbid changes, in both fluids and solids, before and after death, to be wholly functional or idiopathic. In* 1823, 1824, *and* 1825, *pestilence followed the loss of trade and the destitution of the poor. Still more remarkably in* 1830, 31, 2, 3, 4, *and* 5, *an epidemic constitution of the air contributed to its malignity. Then not only the evident distinction between symptomatic and idiopathic fever, and between fever and typhus was further exemplified; but the violent transition of typhus to epidemic cholera was first observed. On all these occasions corresponding changes in the external characters of the vital fluid, identified the prevailing distempers with the pest of the blood, as described in sacred history.*

The commencement of the period embraced in the second section, was as much distinguished by sudden and rapid growth of febrile disease, as that of the first was by its rise. Besides the miseries of famine, which succeeded the failure or destruction of crops in 1816, were simultaneous and commensurate with the sudden increase of fever in 1817 and 1818. But the growth of disease was not nearly so rapid in the metropolis as in the other parts of Ireland, where famine was not so effectually opposed by a liberal supply of food, fuel, and other necessaries of life. These coincidences must have afforded valuable instrution to those entrusted with devising preventive measures, had not

* Medical Reports for the years 1817, 18, 19, 20, 23 and 28.

the preconceived opinions of the *ultra*-contagionists fatally misled them.* The same prejudice, however, still, unfortunately continued, notwithstanding that in each successive year since, other concurring and more evident causes occurred, such as heat and cold not alternating as before with summer and winter; the unprecedented privations of the working classes, and total loss of trade. The latter too became more and more manifest as the chief concurring causes; whilst the separate agency of contagion, according to any laws laid down by its own advocates, became more difficult to be identified. Certainly it never was proved wholly independent of other more evident causes.*

Famine being, in the year 1817, for the reasons assigned, less productive of disease in Dublin than in the rest of Ireland, no additional fever hospitals were erected there. The admissions, therefore, into the primitive one, still afforded as suggested in some of my annual reports, a tolerably accurate scale, for measuring the increase of disease in this city. Moreover it likewise assisted in showing the relative mortality compared with 1816, the preceding year. These facts may be seen in the annexed table.

Years.	Admitted.	Died.	Average mortality.
1816	2703	173	1 in $15\frac{163}{173}$
1817	3682	231	1 in $15\frac{217}{231}$

These results if duly examined and compared with the previous statements from the annals of the Cork-street hospital, are quite conclusive as to the superiority of supplying the poor with the necessaries of life, which was adopted in Dublin, during the first three quarters of 1817, Surely such facts are well deserving of the attentive consideration of political œconomists. It appears, moreover, that though this increase of disease in Dublin, in 1817, compared with other parts of the kingdom, or with 1816 which was a remarkably healthful year throughout Europe, was slight, yet compared with 1815, when the previously tardy advance of disease was opposed by the complex apparatus provided for checking contagion, there was an actual diminution. There was, therefore, a much greater number of patients in the Irish metropolis in 1815, when the most extensive apparatus ever provided against contagion, was in full operation, than in 1817. But it was contemplated, in the latter years, only by the advocates of these measures, that a new and specific contagion had been imported, although great superiority of the means employed in the first three-quarters of 1817 over the anti-contagious apparatus, and over the principles of its adoption, was rendered still more manifest. The very great importance of the illustration afforded by the relative increase of disease in Dublin, and in other parts of Ireland, from 1815 to 1817, under opposite modes of practice will plead for dwelling so long on it. The subject demands much more space than can be given to it on the present occasion. A retrospect, however, of these events in 1817 and 18, may be found in the reports for 1820, 21, 23, and 28 and are epitomized in the following table, which includes the years from 1817 to 1828.

* See Dr. Haygarth's Letter to Dr. Perceval, in 1800., and Dr. Stokes' Essay on Contagion, 1819.

Years.	*Admissions.*	*Deaths*	*Mortality Average.*	*Observations on these Annual Admissions and Deaths in the Cork-street Hospital.*
1817	3682	231	1 in $15\frac{217}{231}$	Famine stayed in the city by supply of food ; raged in other parts of Ireland.
1818	7608	258	1 in $30\frac{126}{258}$	Many other fever hospitals established in Dublin, and received vast numbers. Actual mortality dreadful.
1819	3873	224	1 in $17\frac{134}{224}$	These admissions into the Cork-st. hospital, and deaths, no longer measure the increase of disease in Dublin.
1820	2974	203	1 in $14\frac{132}{203}$	Contagion, famine, malaria, (vid. report 1820, 21,) manifest relative agency.
1821	2973	246	1 in $12\frac{136}{246}$	Diseases more typhoid. See report for 1820, 21.
1822	2307	137	1 in $16\frac{124}{137}$	Decline of disease generally over Ireland, as happened in 1816, before increase of 1817.
Total from 1803.	46361	2869	1 in $16\frac{657}{2869}$	Compare the mortality of this with that of the pest of the blood, in successive years it prevailed.
1823	2668	241	1 in $11\frac{17}{241}$	Pest of the blood, supervened on influenza. See 2d part Pat. Obs.
1824	4599	327	1 in $12\frac{144}{327}$	All diseases, medical and surgical, affected by the pestilence. See Med. Rep.
1825	3878	381	1 in $10\frac{68}{381}$	Besides the peculiar characteristics of the blood, dropsy and spurious phthisis followed cases of the pestilence.
Total 3 years.	11145	949	1 in $11\frac{406}{949}$	The pest of the blood, epizootic and epidemic. Its symptoms, asphyxia, sudden death, coldness, ecchymoses.
1826	10882	386	1 in $28\frac{1}{2}$	The mortality from the pestilence of 1823 was truly awful this year, tho' the average mortality in hospitals was very small, from the numbers in want of trade crowding them, in famine, not disease.
1827	6544	344	1 in $19\frac{38}{344}$	The same observations applicable to 1826 and 27.
1828	2964	193	1 in $15\frac{69}{193}$	See report for 1828 ; the decline of numbers, but increased mortality from the pest of 1823, sudden deaths, phthisis and dropsy frequent.

The average mortality in 1817, became somewhat less than in the preceding year. In both, however, the same principles and practice were pursued, and in the same forms of disease as in 1810, when the first remarkable evidence of a tendency towards pestilence in the prevailing epidemic, was exhibited remarkably in the morbid appearances of the blood and by corresponding functional derangement. Then, too, in some cases, coagulated and sizy blood distinguished the increased action of inflammation; and in other cases broken down, dark coloured blood, as constantly denoted typhoid debility in whatever stage it was observed. (SeeMedical Reports for 1820 and 21.)

In 1818, famine fever uniting with the pestilential disease, which was the comparatively slow growth of preceding years, the number of the sick in Dublin was frightfully increased, and though other large institutions were erected in the different quarters of Dublin, so that 2000 beds were provided for sick poor in fever or famine, still 7608 applicants were received into the Cork-street hospital alone. By far the largest proportion of these, however, were cases of famine rather than of pestilential fever, and demanded judicious administration of food and other necessaries at home, rather than medicines after admission into the hospital. This fact is important in its application, both with a view to medical and political economy. As a further illustration, in connection with it, it should be stated that under appropriate treatment of the different classes of cases of disease and misery, there were but 258 deaths among the 7608 received into the Cork-street Fever Hospital, or 1 in $30\frac{126}{268}$. The question of an imported contagion was also a subject of anxious discussion in 1817, and 18, as may be seen in the annual reports. The description of the epidemics of the preceding nineteen years, equally applies to this period.

In the succeeding four years, 1818 to 22 inclusive (see the Reports from the Cork-street Hospital for that period), the relative effects of destitution, contagion, and in a less degree malaria were distinguishable; but as appears in the preceding table, neither the average numbers admitted, nor the average mortality exceeded that of the seven preceding years.

It was during the course of this famine-fever which prevailed in many parts of Europe, from the same causes, that the new views of its pathology were promulgated, first, I believe, by the French Necrotomists, and afterwards adopted by those of Great Britain and Ireland, namely, that it was produced from beginning to end, by morbid changes in the nervous, but more particularly in the ganglionic system. And having already stated the opinions of other eminent anatomists, in opposition to the assertion of signs of inflammation being always detected in the vascular system of the bodies of those dying of typhus, I was enabled on equal authority to disprove the more recent doctrines formed on changes in the organization of the nervous system. Moreover, on reading some extracts by M. Orfila, from a work then recently published by Dr. Kerner, of Weinsburgh, it appeared that the symptoms before, and the appearances found after death in an extensive district in Germany, were similar to those of the prevailing disease, and were produced by an unwholesome article of acrid food, which all, so afflicted, had eaten. Hence it was to be fairly inferred that the same morbid changes were incidentally connected with the acrid contents of the stomach in the famine-fever.* The very decisive testimony of Dr. Kirby and Dr. Macartney, on the appearances they found in examining the bodies of the dead, in the malignant fevers, is also stated in the reports for 1820, 21. Also

* "Nouvelles observations sur les empoisonnemens mortal qui arrivent si souvert dans le Wirtumberg, par l'usage des Boudans fumes." Par le D'Kerner Tubinque, 1820, 12 nom,

meteoric tables, which show by comparison with corresponding ones, the connection between changes in the weather, and the growth of disease. To those meteoric tables, and tables of disease, I am the more desirous to refer, because their interest will be found greatly enhanced if examined in juxta-position with Dr. Henry Cope's *Demonstratio Medico-Practica,* in which learned work similar observations were made in the corresponding period of the 18th century,* when he was state physician in Ireland, and still more so if compared with Dr. Fielding's paper on meteorology and influenza, read at the meeting of the British Association in Cambridge. (Appendix, Note F.)

The epidemic of 1823, (see my report from the fever hospital, and the first part of my Pathological Observations, both published that year.) underwent a more extraordinary revolution than any I previously witnessed. Its new characters were diminished temperature, loss of vital power, with corresponding asphyxia, dark petechiæ and ecchymoses with jaundiced interstices, extremities blue, severe vomiting and mucous diarrhœa—the discharge varying from orange-coloured and green, to black, sometimes colourless, as in Lienteria. Fatal terminations sudden, often preceded by metastases. Paralysis, and dropsy, also frequently succeeded to, or attended on protracted cases. These aggravated characteristics were still more manifestly connected than in the epidemics of 1810, 17, and 18, with corresponding changes in the external characters of the blood, drawn in the course of disease, or found gorging the large bloodvessels after death, and corroborated the opinion I had previously expressed, of the blood being the chief seat of typhoid or adynamic, as well as of pestilential diseases. I had, however, never before witnessed, except in a few sporadic cases, nor seen described by the writers of the 18th century, characteristics so formidable, nor morbid changes in the blood corresponding with them in the same degree. The malignity of the epidemic constitution of the air was otherwise very remarkable at this time (see table), and as may be seen in the medical journals of that day, it interfered with the recovery of patients after surgical operations, both in this and the Sister kingdoms. Besides slight punctures received while dissecting in the anatomical theatres, were often succeeded by suddenly fatal attacks of typhus disease. That the malignant influence of the air was not only epidemic but epizootic was proved also by its symptoms, such as dark petechiæ in all parts of horses uncovered by hair (the tongue, nostrils, &c.) by glandular tumours, both internally and externally on the same animals ; by hepatization of the lungs and vascular congestion ; dark and clotted blood, and corresponding changes in that drawn or effused in the course of the disease. Numerous cases of this sort were presented to me by the eminent Veterinary Surgeon, Mr. Watts.† Through his

* Demonstratio Medico-Practica Prognosticorum Hippocratis, &c., &c. Ab Henrico Cope, Medico Regio ad statum in Hiberniâ.

† That the practice of physic may be even much more improved by comparative pathology than the knowledge of the human system by comparative anatomy can hardly be questioned by any one, knowing how boundless the field of

kindness I witnessed the course of the disease; and the appearances found on dissection in a much shorter time after death than could have been attempted in the human subject. It was likewise in 1823 that I examined the temperature of the patients in the malignant typhus that then prevailed, and the results were, that even the *calor parum auctus*, of Cullen, was not then applicable to the prevailing distemper, as in many cases the thermometer stood much below 96°. So that fever and *Pyrexia* were then as unsuitable denominations for the existing epidemic in Ireland, as *Cholera* and *Typhus* for that which afterwards committed such ravages in Europe in 1830, 31, 32, 33, 34, and 35. In the same year also I was fortunate in proving by experiments that the buffy coat on the blood, drawn either in inflammatory or dropsical complaints, did not depend, as previously supposed, in slow coagulation, and the subsidence of the red particles, but probably on functional derangement of the chemical affinities subtending to vital power which my experiments in 1807 indicated in the organs of sanguification. If compatible with the space that could be here given to it, it could be shown that great advantages both in theory and practice are derivable from the results of the foregoing observations, but reference on that subject to my Pathological Observations, published 1823, 28, and 30, must for the present suffice. (See 1st, 2nd, and 3d part of my Pathological Observations.)

2668 patients were admitted into the Cork-street Hospital that year, and 241 died, the average mortality being 1 in $11\frac{217}{241}$, though from the opening of the hospital to the conclusion of the preceding year, it was but 1 in $16\frac{124}{137}$.

The numbers admitted into the Cork-street Hospital, during the three succeeding years, viz., from 1823 to 1825 inclusive, (though then other large fever hospitals were established in every quarter of Dublin)

inquiry is in the one case compared with the other. But independently of this, the greater simplicity of the organs of other animals, and of the diseases of these organs, than in man, greatly aid the physician in detecting (if there be any) the traces of similar diseases after death. In the cases and dissections of the horses referred to in the text, the advantages of examining them very shortly after death, essentially promoted my leading objects, namely, to detect, as far as possible, the transition of disease from the morbid fluids to the morbid solids, and *vice versa*. These symptoms of the epidemic, such as loss of pulse and warmth, coldness of breath, skin dark, and clotted blood, ecchymoses, sphacelus, unnatural motions and sounds of the heart, *soufflet de bruit*, in the thorax were all common to the human patient and the sick horse; so were hepatization of the lungs, infarction of the liver; ingorgement of the heart, with dark coloured blood, and also of the large blood-vessels in every part of the body, with the same. Besides these appearances, common to all animals after death, of the then prevailing disease, there was copious effusion internally, of lymph, partly coagulable, but rarely any adhesive inflammation. In now republishing this note, on my report for 1823, I may also observe, that in the spring of 1833, when a fatal influenza was both epidemic and epizootic in Great Britain and Ireland. Mr. George Watts, jun., kindly gave me, for the Surgical Society, a report of cases and dissections of horses, both here and in England, in which, the symptoms, preternatural alterations of the blood, and *post mortem* appearances, corresponded minutely with what Mr. Watts, sen., and I had together witnessed in the epidemics of 1823 and 27.

were 11,145, of whom 945 died, showing a mortality of 1 in $11\frac{409}{945}$. Thus the virulence of the epidemic constitution of the air that year was exhibited.

The same symptoms continued with as fatal consequences in 1826, and 1827, as in the preceding three years, but owing to the admission of many not labouring under positive disease, the average mortality in the hospitals was less, viz.; 17,426 were admitted into the Cork-street hospital, of whom 726 died. To those who witnessed the fever of 1826 and 1827, it is hardly necessary to state, that coldness of the surface and of the breath, asphyxia, blue or purple colour of the extremities and frequent fatal terminations, accompanied by purging and vomiting were then also often to be met with. So much so, indeed, that Baron Larrey, who visited the Cork-street hospital at that time, has since stated, in his Treatise on Cholera, 1830, how much the disease he then saw in Ireland resembled malignant cholera.

The year 1828 was distinguished by a diminution, both in the number of admissions and of deaths in the fever hospital; but this temporary decline cannot have resulted from a favourable change in the epidemic constitution of the air, for the cases still, in many instances, presented the same symptoms of malignancy, and the blood still exhibited the same pitchy and clotted appearances, whether drawn during disease, or examined in the large vessels after death, as may be seen in the report for that year. Indeed, in all the cases in that report, both those who laboured under exanthematous and other fevers, tic doloreux, and dropsy, and the cases of some horses whose dissection is also given there, the morbific influence of the prevailing condition of the atmosphere, was strikingly apparent.* To illustrate the nature of the fever of 1828, and the mode of treatment employed, I shall take the liberty of submitting the following abridgment of a few cases I noted at that time, and published in the Annual Report of that year:

John Baker, aged 64, of a broken down constitution, was attacked on the 10th of December, 1828, and admitted into the hospital on the 13th of the same month. His countenance was then sunk, his eyes anxious and hollow, his voice almost inaudible; the skin was generally cold and clammy, and of a livid hue, particularly on the extremities; constant diarrhœa, general spasms, no coma, or delirium. On getting some warm wine, which he drank with avidity, and warmth being applied to his limbs, the pulse became perceptible. Camphorated mixture, with the aromatic spirit of ammonia was then prescribed; and turpentine enemata, with frictions of turpentine, were directed. Under these remedies, with the addition of turpentine in draughts, and a blister to the neck, he improved for some days; but on the morning of the 19th December, after walking to the fire without assistance, he suddenly expired. After death, the skin resumed its purple motley appearance. Dissection was not permitted by the managers.

James Crotty, after eight days illness, was admitted on the 23d

* See Report for the year 1828, by William Stoker, M.D., particularly from the 79th to 109th page, and from 143d to 161st inclusive.

December, 1828, apparently moribund: his head was drawn back, and the trachea protruded by spasm; temperature under the tongue 99°. Nearly the same remedies were employed as in the last case, and with the same temporary benefit, but general spasms set in, and he soon afterwards expired. The purple colour of the body continued.

Mrs. Edwards, aged 38, was admitted 6th December, 1828, in the last month of gestation. Skin cold and clammy, extremities purple, eyes sunk, features collapsed, voice scarcely audible. Besides particular attention to the state of pregnancy, a similar practice as in the preceding cases was adopted, but the powers of life gradually declined, and the motion of the fœtus in utero, diminished until death of both took place on the 9th of the same month. On *post mortem* examination, beside evidences of much chronic disease in the cranial and thoracic viscera the vessels on the surface of the brain were darkly tinged. The lungs were hepatized, and of the same purple appearance as the extremities. These latter results of diseased action were most probably of no long standing, and seemed the immediate cause of death.*

The general and very decided check to the growth of disease, which has been already stated to have occurred in 1828, I always attributed to the filip then given to our *sickly retail trade;* and gladly quoted it as evidence of the buoyancy of this country, when relieved from a concurring cause of its aggravated calamities. Moreover, discord, at once the parent and child of such calamities, ceased during the transient period of prosperity. With respect to remedial measures, my subsequent experience of their efficacy further warranted me in recommending those I had employed in the aggravated form of the epidemic, in the year 1823, and which I believe, were in both cases, essentially the same.

In the year 1829, the same prostration of strength, diminution of animal heat, suspension of the vital powers, and other symptoms of malignancy prevailed as in the year 1828. The average mortality for the same reasons was nearly the same as in the preceding year, namely; 234 deaths and 2,839 recoveries, or 1 in $21\frac{31}{234}$. In the report of that year too it may be perceived that several cases then detailed of typhus, dysentery, hepatitis, and rheumatism, were accompanied by some of the symptoms above alluded to. These cases seem to me to have suggested to the author of that report the term cholera, in a preceding page.†

Having repeatedly announced, from the beginning of the year 1830, that the epidemic had, in a large proportion of cases both in hospital, and private practice, assumed characteristics of malignant diarrhœa, resembling those diseases described on the Continent, and in the East of Europe, and therefore demanding particular attention, I have drawn up the following table of admissions and deaths for each month during 1830, 31, 32, and for the first two months of 1833, with a view to that question. I have ever avowed that opinion, and I feel it my bounden duty, however mis-

* A particular description of this examination by Surgeon Trant, by whom I was assisted is given at the 153d page of my report.

† See Medical Report from the Fever Hospital and House of Recovery, Cork-street, for the year 1829. By John O'Brien, M.D., &c., &c.

conceived or misrepresented, still to maintain that rigorous investigation on that subject is necessary for public security :—

	1830		1831		1832		1833	
Months.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths
January	355	42	454	38	37	31	262	21
February	287	23	393	31	384	28	265	16
March	309	20	332	30	364	34		
April	257	20	290	21	214	29		
May	250	17	278	28	280	18		
June	217	20	402	28	241	20		
July	220	23	244	14	181	8		
August	15	15	223	28	199	9		
September	206	22	197	21	167	14		
October	250	22	200	14	224	19		
November	292	17	300	36	294	12		
December	312	26	283	23	239	9		
Total each year.	3170	267	3703	307	3168	231		
Average.	1 in $11\frac{285}{273}$.		1 in $12\frac{8}{307}$.		1 in $13\frac{153}{231}$.			

From the above table it appears that the mortality of 1830 and 1831 was nearly the same as in that of 1823; and that the mortality of 1832, excepting in the first quarter, when it was 1 in $8\frac{41}{93}$, and in the other three only 1 in $14\frac{107}{138}$; but in the month of June when cholera was most malignant, and therefore more strictly excluded, the mortality was only 1 to $22\frac{5}{8}$. This relative diminution in 1832, arose from the fact, that in the months of November and December, 1831, and January, February, March, and April, 1832, cases of the prevailing epidemic, not

being yet ackowledged as such, were admitted indiscriminately (the mortality of those months was therefore increased); but during the remainder of the year 1832, when the epidemic was most malignant, severe cases were excluded from the wards of the hospital, and sent to the establishments for the reception of cholera patients. The mortality during the latter months of 1832, was therefore less than in the corresponding months of any year since the Cork-street hospital was opened, according to the first resolution of the trustees "for the relief of the destitute poor afflicted with fever, and to check the progress of contagion, as well as acquire and diffuse medical knowledge." (See my comparative view of cholera morbus, Jan. 1832.)

Having thus adverted generally to this mischievous anomaly, I shall proceed *seriatim* with each of the three years in question. And first with respect to 1830, it may be seen in the 3d part of my Pathology* then published, that besides adverting previously to the decisive evidence of Mr. Searle in the East, in his publication on epidemic cholera, and to that of Dr. Stevens in the West Indies, in his observations on cholera and typhus, in favour of the pathology of the blood I had advocated; it was also stated "that there was then another form of the pestilence, namely, *Cholera Morbus*, which was more fatal than the rest."

The following are abridgments from that publication, of two cases in which the intellects were perfect, and both by their symptoms and *post mortem* appearances, tended to prove a direct connection between asphyxia, coldness, blueness of the skin, sudden death, and morbid changes in the condition of the blood. In both cases, it may be perceived that the epidemic supervened on other diseases, which predisposed to the attack.

John Martin, a butcher, aged 42, was admitted 24th January, 1830, having laboured for eight days under symptoms of Pneumonia, which were relieved by copious bleedings, leeches, and blisters, &c. The blood first drawn, I learned was neither firmly coagulated, nor much buffed, but that the last was pitch-coloured and clotted. At the time of his admission no pulse could be felt even in the Iliac and Carotid arteries, and but an indistinct fluttering at the heart itself. The skin was icy cold, moist, and livid; and the extremities, nose, lips and tongue were quite purple, as were also those parts to which blisters had been applied. He walked up stairs without help, and his mental faculties were complete to the last moment. Upon stethoscopising his thorax, that peculiar *souflet de bruit* which, in the cases of horses in 1828, already referred to, indicated hepitization of the lungs, was distinctly audible. Warmth and cordials were vigorously employed, but general spasms set in, and death followed in twelve hours from admission. On inspecting the body next day, it was generally purple, as was usual at that time, not only in the Cork-street, but in the Edinburgh hospital, according to Dr. Alison and Graham's lectures, which I at that time quoted in support of my Pathology of the prevailing epidemic.

* Pathological Observations, part 3d, 1830. By William Stoker, M.D., page 11 and 101. At the 109th page the above case of Martin is fully detailed under the head of "Pneumonia Typhoidea."

Second case.—Mr. T. W., aged 20. This gentleman had long laboured under caries of the dorsal vertebræ, together with pectoral affections, which had become very urgent in February 1830, accompanied with hœmorrhagic fever and dropsy. He came to town for medical advice, and by the antiphlogistic regimen and small bleedings was relieved, the blood being buffed, and for some days his strength and appetite continued to improve. Unfortunately, however, he was indulged unknown to me, by his attendants with too much food, and the affection of the chest became suddenly alarming. Bleeding and blistering were again resorted to, but not with so good an effect as at first. The blood drawn became a dark-coloured clot, the lips, tongue, and extremities purple; the countenance livid; the voice failed; the pulse became suddenly feeble, and entirely ceased six hours before death, which was about a fortnight after his arrival in Dublin, and about twelve hours after his relapse.* On dissection, the face, neck, and chest were of a livid hue, the tongue, lips, and interior of the mouth quite purple: hypertrophy of the heart, without disease of the valves: the large vessels were filled with dark blood: numerous tubercles in the upper portion of the right lung; the whole of the left lung was emphysematous, and adherent at its inferior margin by a fistulous communication with the 7th and 8th dorsal vertebræ, both of which were in a state of caries. The abdominal viscera were sound except the pancreas, which was enlarged and tuberculated.

In addition to these specimens of the epidemic of 1830, I can only refer for a more complete description of it to the 3d part of my Pathological Observations, and to Dr. Grattan's Report of the Fever Hospital and House of Recovery, Cork-street, both published that year. In the former of those publications I recommended the root of dandelion, prepared as coffee, both as a preventive, and a remedy in the severe forms of cholera morbus, and obstinate diarrhœa, which then presented themselves in hospital and private practice, and also preparations of achillœa milefolium or milfoil in those hydropic and rheumatic affections with which they frequently alternated.† Very extensive trial of these vegetable substances, both as substitutes for more costly, and sometimes less safe articles of the *Materia Medica*, as well as favourable reports subsequently by some of my medical brethren, led to my first recommendation of them. I repeated it from finding them well suited for preventing and curing diseases more general amongst the Irish poor than those of other countries (e. g.) epidemic cholera, and diarrhœa, and also for other diseases, which I observed frequently to alternate, since they have become more pestilential; I mean dropsy,

* It has been objected by those opposed to the investigation that I sought such cases as those in the text are not those of *Cholera Morbus*. But I never said they were; I am now sure, however, by comparing them with the cases which those objectors have published as examples of the malignant epidemic of 1832, 3, and 4, that those of 1830 were essentially the same.

† Pathological Observations, part 3, on inflammatory, typhoid, and symptomatic diseases, &c. Dublin, 1830.

spurious phthisis, and rheumatic pemphigus. This peculiarity of the diseases of the poor of Ireland (as will appear more manifest under the subject of statistics) arises, I believe, chiefly from scarcity and insufficiency of food, particularly from the unwholesomeness of the potato, the staple food of the peasantry, when that article, as annually happens, is in a state either of decay or immaturity. An antidote, therefore, to such a national calamity, which might, at the same time be an agreeable substitute for ardent spirits, itself a very general exciting cause of such diseases, must be deemed a *desideratum* of great moment in medical as well as political economy. In Dr. Grattan's report of 1830, it is stated that it appears to him that the forms of the epidemic which then presented themselves "passed by such imperceptible gradations into each other, as to be considered but varieties of the same disease."*

For a fuller description of the epidemic of 1831 than would be compatible with the space that remains, I must refer to the medical report from the Cork-street fever hospital for that year, and to my Comparative View of Cholera Morbus, published at the close of it. In the former of these publications, the epidemic of 1831 is thus described: "Its characteristic symptoms are great depression of spirits, irregular, small, and sometimes intermitting pulse, *tongue seldom dry*, but loaded with a viscid mucus, bowels torpid, *alvine evacuations, abounding with diseased fœtid mucus, and deficient in bile, brain seldom engaged.*"† The following specimens are extracted from my Comparative View. (See Appendix, Note D.)

December 8th, 1831.—Deborah Deane, ill six days of severe cholera, which commenced with painful and violent spasms in the trunk and lower extremities, with vomiting and purging of turbid serous gruel-like fluid, and attended with extreme debility. The surface everywhere cold, features shrunk. Her symptoms were quickly subdued, chiefly by a mixture with compound spirit of ammonia and camphor, and on the 9th December she was convalescent.

December 13th, 1831.—Charles Kelly, aged 70, ill seven days, of cholera, which commenced with violent pains in his stomach, and spasms in his legs, accompanied with vomiting and purging of gruel-like fluid, and extreme prostration of strength; his face and hands shrunk and blue; skin cold and clammy; no pulse at the wrist; voice scarcely articulate; lower extremities dark blue; spasms and a painful sense of stricture over the belly and chest. By the aid of frictions, warmth, and camphorated mixture with ammonia, which were remarkably successful in this case in producing reaction within its proper bounds, he was considerably improved. On the next day, inflammation of the lungs set in, which required bleeding, and the blood was slightly buffed, an event which often takes place after crises in fever, though it had not previously. His recovery from this time was progressive, and he was dismissed

* Report of the Cork-street Hospital for 1830. By R. Grattan. M.D.

† See Medical Report of the Fever Hospital and House of Recovery, Cork-street for 1831. By P. Harkan. M.D.

from the convalescent wards a few days afterwards.* It was chiefly with a view to such cases as this that I was led to recommend a more ready admission to the hospital than in ordinary times, and no part of the cholera regulations, afterwards published at the suggestion of Drs. Russell and Barry, appear to me more likely to save life than those which enjoin ready admission of those who sought it, and the conveyance of patients in an horizontal posture. As may be seen in the report of 1823, I urgently recommended such regulations.

The next table, taken from the journals I kept during my bimestral attendance, ending 4th February, 1832, includes those two months in which I first witnessed sporadic cases of epidemic cholera, approaching, on the one hand to the distemper of 1823, and on the other to the aggravated form it afterwards assumed in 1832, 33, and 34 :—

No. in Cholera.		Died.		Typhus & Synocha.		Died.		Inflammatory Fever		Died.		Scarlatina.	
Male	Female	M.	F.	Male	Female	M.	F.	Male	Female	M.	F.	M.	F.
10	35	6	12	14	25	1	1	6	22	0	0	2	5
Delirium tremens		Died		Phthisis.		Died.		Rheumatism.		Died		small-p. after vaccination.	
Male	Female	M.	F.	Male	Female	M.	F.	Male	Female	M.		M.	F.
3	2	1	1	3	23	1	9	10	54	1		1	4

Besides those cases enumerated in the foregoing table, there were some nondescript or simulated, making the whole number who passed under my care during those two months, 60 males and 204 females, of whom 8 males and 16 females died. On the last day of that attendance 12 males and 42 females remained, some convalescent and others still labouring under acute or chronic complaints, one only, of the latter, a female had symptoms of cholera. The average mortality was 1 to $10\frac{5}{8}$. And it may be observed here that this as well as the general mortality in the hospital at that time, far exceeded that on the total at the close of 1830, which was scarcely 1 in 18. This difference itself indicated clearly the unusual severity of the epidemic; but the following report of some of the fatal cases in those two months, further shows what the epidemic truly was :—

December 3, 1831, Anne Keogh, aged 20, some time in hospital, states that her illness commenced seven weeks ago with purging vomiting, cramps in her bowels and calves of her legs. Although now somewhat relieved by chalk mixture, prescribed on her admission, yet is still distressed by diarrhœa : alvine evacuations, frequent and like thin rice gruel, skin cold, voice and pulse feeble, countenance shrunk. Under the use of various remedies this patient continued for several days alternately better and worse, and was at length sent to the convalescent wards. There in a few days she suddenly relapsed into the most malignant form of cholera morbus, and died five hours afterwards : the body and extremities having become purple for some time before death.†

* See my Comparative View of Cholera Morbus. Published January 30. 1832.

† This and five other cases who relapsed in the convalescent ward at the same period are detailed from the 16th to 22d page of my Comparative View. already adverted to in the text.

January 1st, 1832. Brian Brady, aged 50, had been attacked six days before with vomiting, purging, and cramps in the belly and legs; on the 22d December he was admitted and gradually recovered. But on the 7th January he suddenly relapsed, in the course of the morning with purging and vomiting of gruel-like fluid, which ceased in the afternoon. The skin was at that time cold, moist and blue, his breath was cold, eyes hollow, and features contracted; no pulse perceptible; spasmodic pains in his belly and legs; no urine passed for eight hours, nor was there apparently any secreted, as the bladder was empty. No interruption of the mental faculties. Notwithstanding the employment of cordials, friction, and warmth, he died at six o'clock the same evening, about seven hours from the commencement of his last attack. On the succeeding day the body was rather less purple, and had the appearance of being dead some days, as was usual in such cases. This, too, as is well known, was constantly observed in fatal cases of cholera, after that disease had been officially announced in Dublin.*

January 7, 1832.—Patrick Dargan, an habitual drunkard, was admitted. He had laboured for seven days under cramps in his belly and legs, attended with great prostration of strength. At the time of admission, however, these symptoms had abated, and he was then principally affected with stricture and pain of his chest, especialy at the region of the heart, his appetite was keen, pulse full and strong, skin warm. Under the employment of suitable remedies, particularly venesection and aperients, and a mixture with ammonia, he gradually improved; but on the 12th, at 9 a. m. he was suddenly attacked with mucous purging, and at 11 a. m., with pain and spasm through his whole body, with constant writhing of his limbs, skin cold, shrunk, and livid, hands and lower extremities remarkably so, and partially occupied with extensive echymoses. The eyes, naturally prominent, were then hollow, and his countenance was pale, collapsed, and anxious; no pulse could be felt at the wrists even after warm drinks and warmth had been employed. These symptoms I have been thus particular in stating, as a very unfortunate difference of opinion arose between me and my colleagues, Drs. O'Brien and O'Reardan, who with Mr. Hale and Mr. Lawless, at my request, had seen the case. It was one of those cases I wished to be examined before and after death, and compared with those reported from England and the Continent; but my colleagues did not agree in these views, and both the Boards of Health and the Managing Committee were opposed to it. Not only was my proposition rejected but, wholly for proposing investigation, with a view to public safety, I have been since unrelentingly persecuted. Although very active treatment was adopted in Dargan's case (as ordered in full consultation), death took place seven hours from the period of the relapse. About half an hour after death, Dr. William Stokes inspected the body along

* In the manuscript accompanying the report of the months of December, 1831, and January, 1832, six other fatal cases of Cholera and Fever, in a severer form, were detailed.

with me, and the most remarkable circumstances then to be observed were the constriction of the abdominal muscles, the livid hue of the skin and echymoses on the elbows and lower extremities. From such appearances, as well as the report the nurse gave of the symptoms and sudden death, Dr. Stokes expressed it as his opinion, and afterwards promptly repeated it in a letter to me, that the case appeared to him to resemble, and that he would pronounce it malignant cholera, if he had not on other occasions witnessed as sudden prostration of strength, and as sudden dissolution follow perforation of the intestines. He also joined with me in regret that the regulations adopted by the managing committee of the hospital opposed my urgent request of *post mortem* examination, to decide the nature of this interesting and important case—one, I certainly believed, of vital importance to the public at that time.

But the following table of admissions and deaths, constructed from the annual reports of the managing committee of the Cork-street Fever Hospital, being necessary to bring this sketch to the termination of the proposed period, and in willing compliance with a request by Henry Warburton, Esq., M.P., the able chairman of the Parliamentary Committee of Enquiry on Medical Education, I add it. Besides it affords valuable evidence on the important and still unsettled question in hand, whether the epidemic constitution which has so repeatedly produced such dreadful effects in Great Britain and Ireland since 1832, was then the result of newly imported contagion *sui generis,* so as to be productive of disease, requiring distinct and separate modes of prevention and cure? or of atmospherical distemperature producing an aggravation of disease to which it had previously approximated, and, therefore, requiring no more than active employment of the remedies previously in use?

Table of admissions, deaths, and average mortality, annually, in the Fever Hospital and House of Recovery, from 1831 *to* 1834½, *inclusive.*

Years.	*Admitted.*	*Died.*	*Average Mortality.*
1831	3602	307	1 in $11\frac{225}{307}$
Total for 28 years.	88190	5659	1 in $15\frac{3105}{5659}$
1832¼	3991	290	1 in $13\frac{220}{291}$
Total for 29 years.	92181	5949	1 in $15\frac{2946}{5949}$
1833¼	3332	293	1 in $11\frac{109}{293}$
Total for 30 years.	95513	6242	1 in $15\frac{1883}{6242}$
1834¼	4524	422	1 in $10\frac{304}{422}$
Total for 31 years.	100037	6664	1 in $15\frac{77}{6664}$

Comparing the average mortality in each of the years, in the above table, with that which occurred previously, the disproportion is very remarkable, especially in those years, during which restrictions on the admission of the malignant forms of the epidemic already referred to, were less rigidly enforced. On the other hand comparing this with the statistical tables inserted in former pages, for the last 15 years, it appears that the mortality in 1823, 24, 25, 26, and 27, when pestilence raged with characters, in many respects resembling those in the last 4 years, was very nearly the same. But I cannot enter further, at present, on this important question. There is, however, an additional array of facts to illustrate it in a pamphlet I published on the subject, at the close of 1831, to which I beg leave to refer those not yet fully decided. There is also a memorial connected with that pamphlet which I presented in 1835, first to the King and Queen's College of Physicians in Ireland, and subsequently to the Irish government, praying of the former, adjudication, and the latter an impartial investigation, not less with a view to promote public security, than to obtain that justice which is the birth-right of every man.

A few abridged cases from the medical report for the year 1832, and there given as specimens of cholera morbus epidemic in that year, will assist, I hope, to settle this important, and to me anxious question, which, though it may have lost some of those features which excited universal panic at the time I first proposed investigation, for the purpose of reducing it to its just proportions; yet must be still deemed deeply interesting, if the average mortality in hospitals in the current year, and the frequency of sudden deaths amongst all grades of society be duly considered, with a view to the future, either as regards prevention or cure.

Case of Epidemic Cholera, No. 1.: *(See Medical Report for* 1832, *P.* 18.*)*

Bridget Kerwan, aged 60—seized April 10, 1832, at two o'clock a.m. with severe vomiting and purging. At 5 o'clock p.m., countenance collapsed and pale generally; eyes sunk; a livid circle around them; cheeks naturally florid, inclining to blue colour; no pulse at the wrist; feeble in the carotid arteries; extremities quite cold and livid; voice nearly extinct; body cold; hands and feet shrunk; the discharge from the stomach dark-coloured and muddy, with a tinge of white; no urine passed for six hours; feet and legs affected with painful spasms. This train of symptoms, not seen before by the author of the report in question, he announced the case to be epidemic cholera. By friction and dry heat to the extremities, large sinapisms to the centre of the body, both before and behind, and two grains of calomel, and quarter of a grain of opium, given every half-hour, with a spoonful of a stimulant mixture of compound spirit cardamons and aromatic spirit of ammonia, the pulse and voice were restored, the vomiting and purging were checked, and the lividity of countenance disappeared the same

evening. The patient was able to sit up in bed on the succeeding morning: she and her friends ridiculed the alarm of its being a case of cholera. The patient, however, relapsed on the next day, and died that night.

Case II.

R. W., aged 50, an embarrassed tradesman, attacked on the 27th April, 1832, after slight indisposition for two days, with sickness at stomach and severe vomiting; 2 o'clock, p. m. countenance pointed and pale; eyes sunk and languid; pulse quick, feeble, and irregular; skin soft and clammy, but warm; voice languid but distinct; constant painful spasms in the feet, and backs of the legs; no discoloration of the skin; tongue pale and shrunk. The author of the Report for 1832 pronounced this also a case of spasmodic cholera, which the patient's friends did not credit. The patient died within ten hours from the attack, notwithstanding the sedulous employment of the same remedies successfully administered in the case of Bridget Kerwan. (No. I.) The rapidity to a fatal termination, the intensity of the spasms, and the character of the pulse, left no doubt in the reporter's mind as to the real specific character of the disease. The two other cases of recovery, given in the same report, as specimens of epidemic cholera, differ so little from the foregoing either in symptoms or treatment, that it is only necessary to refer to them as given at the 21st, 22d, and 23d pages of his report.*

In concluding this section, I have to offer as an apology for so superficial a survey of the many important subjects it embraces; that the original design of submitting this sketch to be read at a Meeting of the College of Physicians, and of the British Association, in Dublin, necessarily restricted it. Besides, the want of free access to those medical records I in vain sought from the managers of the Cork-street Hospital, materially interfered with the execution of my task, especially on the leading question. These deficiencies, however, I hope I shall be enabled under the sanction and support of the parliamentary committee of enquiry, and its excellent chairman, Mr. Warburton, to amend at some future period. There are other reasons, however, which lead me further to regret being compelled to curtail or crush those illustrations of the Pathology of the blood, which my experience enabled me to collect. The experiments of Sir D. Barry, MM. Magendie, Gaspard, and Orfila, had already extended these illustrations, and by comparing them with the experiments of Drs. Morgan and Addison, and with the able paper read by Dr. Macartney, at the last meeting of the British Association, at Cambridge, and his experiments on the nervous system, then detailed, I am sure sound Pathology might have been greatly promoted.

* See Medical Report of the House of Recovery and Fever Hospital, Cork-street Dublin, for the year 1832. By John O'Brien, M.D., &c., &c.

SECTION III.

Period from 1798 *to* 1834, *inclusive.—Medical statistics.—Their deficiency in Dublin a chief cause of abuses in the direction and management of public institutions, originally devised for the prevention and cure of epidemic and pestilential diseases.—These abuses exemplified by the records of the Fever Hospital and House of Recovery in particular, and also by the statements promulgated by the general Boards of Health, especially in the years* 1817, 18, 19, 31, 32, 33, 34, *and* 35.—*Conclusion.*

STATISTICAL enquiry has become, of late years, interesting and instructive as generally as its application to improvements in the state of society, even in the most civilised countries. I, therefore, very willingly aided the commissioners, appointed by government, to extend its benefits to this country, as far as long experience and close observation in the chief Charitable Institutions of Dublin, enabled me; and this section is chiefly compiled from my replies to their queries. The defects of statistics in the British Metropolis, since the commencement of the 19th century, are deprecated by all who have been anxious to learn the causes of its immense population and wealth, and surely the total neglect of even Bills of Mortality in the Irish Metropolis is much more to be deplored by all who feel desirous to know the causes of its comparatively slow advance, either in wealth or in population, during a period in which the number of the inhabitants of Ireland is stated to have nearly trebled, with a view to promote its prosperity. In drawing up the annual reports of the Cork-street fever hospital and house of recovery since it was opened, in 1803, I have often complained of the deficiency in Dublin of bills of mortality, and endeavoured to remedy it as respected that institution; and now, under the hope of obtaining more attention, I do not hesitate to express my opinion, founded on all my experience for nearly forty years as student and physician in the chief of our charitable institutions, that to the want of well kept registries or medical statistics, is mainly to be attributed the sufferance of increasing misery and mortality which have occurred among the sick poor of Dublin for the last seven and thirty years, but more especially within the last twelve. By correcting the mischievous errors and prejudices which unfortunately guided those intrusted with institutions intended for prevention and cure, but more particularly the otherwise valuable one to which this section will be chiefly confined, statistics would have been most salutary. Instead of wasting in vain the funds, munificently supplied by the humane and affluent, and by government, I am sure these institutions would, of themselves, have been sufficient for the attainment of the great objects for which they were first designed.

The failure of the fever hospital and house of recovery, in Cork-street, contrary to the ardent hopes with which, in my youth, I joined

it, on its first opening, namely, to avert those calamities which had previously to a very remarkable extent both depopulated and demoralized it, is manifest in the comparative view afforded by the census of 1798, 1804, and 1835. This failure I have repeatedly stated, in vain, to the Managing Committee, and to the Members of the Irish Government, to have arisen from causes wholly beyond its controul;

"Statists, indeed,
And lovers of their country, as may seem."

The following comparative view taken also from authentic documents will, I trust, gain more attention.

The population of the original district of the Cork-street Fever Hospital, the first of the kind opened in Dublin, comprising the five parishes of St. James, St. Catherine's, St. Audeon's, St. Nicholas Without, and part of St. Nicholas Within, of St. John's and St. Peter's, especially in those parishes heretofore chiefly occupied by manufacturers, such as St. Catherine's and St. Luke's, not only has not increased but actually diminished in the last seven and thirty years. This will appear by comparing Dr. Whitelaw's census in 1798 with that by the commissioners appointed by government in the present year, 1835, (e.g.) The total number of inhabitants in St. Catherine's in the year 1798, was stated in Dr. Whitelaw's tables to be 20,176, but in the same parish, as at present appears by the tables of the commissioners appointed by government, the number of inhabitants in 1835 is but 17,800. In St. Luke's parish the inhabitants amounted in 1798 to 7,241, but in 1835 the inhabitants amount but to 6,605. As the relative state of these two parishes in 1798 and in 1835, consisting at the former period, chiefly, of weavers and other manufacturers, must be particularly interesting at present, the following table is extracted from one of Dr. Whitelaw's, constructed in 1798, and from the census taken by order of government in 1835.

I should further premise that, did the occasion allow, the progress of the depopulation of the Liberty, about to be exhibited, might be exemplified, not only by individual cases of actual starvation, but of the total disappearance of entire families under the pressure of famine, and its close attendant, pestilence. Such exemplifications having added to the interest excited by the replies of the physicians, on the same subject, in the rural districts of Ireland, I regret the more being precluded from attempting to enter on them, on the present occasion. To the annual reports of the fever hospital, on which I have already so often relied, I beg to refer for explanation, on this part of the subject especially, to the medical report for the years 1804, 5, and 6, by the physicians then attached, and to that for 1815, by Dr. Robinson, M.D. (See Appendix, Note H.)

Index to Tabes.		Upper and Middle Classes.			Servants of Do.			Lower Class.			Total	Total	Grand Total.	No. of Houses		Average to a house
		Males	Females	Total	Males	Fems.	Total	Males	Females	Total.	M.	F.		Inhabited	Waste.	
1798																
1	Parishes of St. Catherine & St. Luke	991	846	1837	378	660	1038	7608	9693	17301	8977	11199	20176	1481	140	13.62
2		150	148	298	32	75	107	2846	3990	6836	3028	4213	7241	454	41	15.95

1835		Established Church.	R. C.	Pres.	Dis.	Total.
3	St. Catherine's,	4165	13334	115	186	17800
	St. Luke's,	940	5645	5	15	6605

This decrease of inhabitants since 1798, amounting in St. Catherine's to more than 2500, and in Luke's to 636, cannot fail to incite public attention; but if the proportion of the upper and middle classes, and their servants, stated by Dr. Whitelaw in 1798, and still more if the absence of prostitution in the Liberty at that time, which he also affirmed, be compared with its present state of degradation, especially of the female part of the population, it cannot fail, I hope, to excite not only the commiseration of all the humane, but the active interference of those who have power to interpose, or knowledge to suggest some adequate prevention and remedy for such deplorable declension. (See Appendix, Note H.)

Many of the houses in the Liberty have fallen into ruin. All the remaining parts of the city within the circular-road, were subsequently included in the Cork-street Fever Hospital district, and by comparing the population of Dublin, in 1753 and in 1798, with that in 1835, as given in the following table the increase in the intervals may be perceived, viz:—

By Dr. Rutty, in 1753, population	128,570
Total population of Dublin, in 1798, according to Dr. Whitelaw's census	182,370
In 1835, according to the report of the Commissioners by Government.	234,408

By this table it appears that the increase of the population of Dublin, in the interval between 1753 and 1798, a period of 45 years, amounted to about 53,800, and that in the interval between 1798 and 1835, an interval of 37 years, it amounted to 52,038. Now from all that is certainly known of the population of Ireland since 1753, it appears that its increase was beyond all comparison more rapid than is exhibited with respect to the metropolis in the above table. But I wish more particularly to observe here of the disproportion between the increase of population in the country in general, and in the metropolis since 1822, when, as will appear in the subsequent part of this report, that the epidemic diseases of Dublin, assumed peculiarly fatal and pestilential characteristics. In 1821, the population of Ireland, then amounting to 6,811,827 is said to have been nearly double what it was at the commencement of the 19th century. In 1831 it was found to amount to 7,784,539.

There is a table inserted in the Rev. Dr. Whitelaw's Essay on the Population of Dublin, showing the decrease between 1798 and 1804, which I shall beg leave to extract as a further illustration of the causes which led to the erection of the Fever Hospital and House of Recovery, and of the necessity there was of duly estimating them in the subsequent direction of that institution :—

	Houses.	*Inhabitants.*
Population according to my Survey in 1798: Dr. Whitelaw's Essay, page 25.	14,023	170,361
Ormond Market not returned by me, taken from the Conservators' Survey.	33	444
Spring-garden, not returned by me, as lying beyond the Circular-road, but properly a part of Dublin, taken from Ditto.	345	1,286
Total Population in 1798,	16,401	172,901

	Houses.	Inhabitants.
Population, according to the Conservators, in 1804, supplying deficiencies as in preceding page.	16,234	172,042
Population of the district of Harold's-cross, with that of Sandymount and Black-rock, deducted as not being parts of Dublin.	589	4,143
Total Population in 1804	15,645	167,899
The return of 1798, therefore, exceeds that of 1804, by ———	756	4,192

Indelible remains of the history of the six years embraced in the above table sufficiently manifest the miseries of civil war to have been the chief concurring causes of the depopulation of Dublin at that time; and without attempting to trace back to any preceding link, it is important to establish even this single one of connection between them, and the unprecedented and calamitous growth of epidemic diseases described in the next table, which took place since the opening of the Cork-street hospital for the reception of patients, and was registered in the annals of that institution from 1803 to 1816 inclusive.

The following table is in many respects the counterpart to that inserted at the 26th page of this sketch; both were constructed from my annual reports of the fever hospital and house of recovery, as to the admissions, deaths, average mortality, and successive changes in the causes and nature of the prevailing pestilence, as duly registered in that institution. Besides illustrations of the nature of pestilence, from 1817 to 1828, with a view to pathological and therapeutical information, this table, embracing the twelve years from 1803, when the Cork-street hospital was opened, to 1816, is intended for preparatory explanation of the succeeding observations on the management and abuses of that institution, which I made, in reply to the category sent me by the commissioners of the Poor Law Enquiry. The comparative success of the Cork-street hospital in checking the growth of fever, which is exhibited in this table, whilst fevers were demonstratively contagious, will, I hope, assist at once to explain the signal failure afterwards of multiplied institutions of the same kind, to have mainly arisen from mis-direction, and likewise to indicate those adaptations of the means both of prevention and cure, which other causes, and consequent changes in the nature of prevailing diseases, have made necessary. Moreover the infraction in the bye-laws, originally framed by the managing committee, not only to insure the right conduct of themselves and successors, when they undertook so responsible a trust, but the protection of all who co-operated with them, will be thus rendered more apparent; and likewise, how that infraction has been alike injurious to the public, and unjust to individuals, who, anxious to discharge the duties of their stations, looked to the bye-laws as their safe guides.*

* See Rules and Bye-laws in the annual reports of the fever hospital and house of recovery; clauses, managing committee, physicians.

Years.	Admitted.	Died.	Average.	Evident Causes of Rise and Decline of Fever.
1804	415	29	1 in $14\frac{9}{29}$	Poverty in the Liberty from decline of trade, aided by contagion and malaria. See Medical Report for 1804.
1805	1024	67	1 in $15\frac{19}{29}$	Farther decline of trade, and the emigra- of the male population of the Liberty.
1806	1264	103	1 in $12\frac{28}{103}$	Contagious fever extending over the south side of the Liffey within the Circular-road.
1807	1100	92	1 in $11\frac{88}{92}$	Scarlatina prevailed and rendered the epidemic fatal; but checked by fever hospital in the district it embraced.
1808	1071	94	1 in $11\frac{37}{94}$	Efficacy of Fever Hospital manifest, and therefore extended over the entire city.
1809	1051	83	1 in $12\frac{65}{83}$	Diminution of continued fever, but remarkable increase of ague.
1810	1774	154	1 in $11\frac{40}{77}$	Ardent spirits cheap and of bad quality; fever more contagious and malignant.
1811	1472	115	1 in $11\frac{91}{115}$	Improved modes of prevention and cure, the cause of diminution of numbers affected and of mortality.
1812	2265	166	1 in $13\frac{107}{160}$	The type of 1810 re-appears with the same causes; extension of fever hospital thus demanded.
1813	2627	164	1 in $16\frac{3}{194}$	Fever of 1810 still continued to increase, but the mode of cure then founded on the distinctive characters of the blood, rendered the mortality less.
1814	2329	143	1 in $11\frac{104}{143}$	Discriminate treatment of distinct forms of continued fever, preventive and curative, described. See Treatise on Fever, London, 1814.
1815	3789	187	1 in $20\frac{44}{178}$	The same causes of increase of fever and less mortality continued.
1816	2763	173	1 in $15\frac{168}{173}$	Though the harbinger of famine and pestilence this year was remarkably healthy over Europe generally.
Total	22944	1576	1 in $14\frac{960}{1570}$	Thus far the results of the operation of the Cork-street Fever Hospital are favourable even compared with similar institutions in Great Britain during the same period.

This synoptical statement of the occasional increase and decline of contagious fever, and of the obvious causes of its desultory progress, under the preventive and curative means employed in the Cork-street Fever Hospital during the first twelve years of that institution, affords, I hope, some preparation, perhaps even apology, for the observations I have now to make on the management of that institution. They are made with a view to the more successful adaptation of the means of prevention and cure; an adaptation which I believe to have become necessary owing to the extraordinary increase and malignity of epidemic and pestilential diseases since 1816. To account also in some degree for the order of the subsequent remarks, I have to state, as already in-

timated, that it is the same as that of my replies to the Commissioners of Poor Laws' Enquiry, and of which they will chiefly consist.

There are many other fever institutions within its district (i. e.) in Dublin, beside the Cork-street hospital, which have been established since 1803, when that, the primitive one, was founded. They were erected to check the rise and growth of epidemic and pestilential diseases; but were constructed and multiplied in compliance with the opinion, (I think a fallacy) that the increase of disease depends mainly or wholly upon contagion. On this principle they appear to me to have been unnecessarily enlarged to provide for the emergencies of the occasionally alarming influxes on the more ordinary course of disease. In ordinary times it is however, certain, that legitimate cases could not be found to occupy a sixth of the beds, and they must have remained vacant had not these hospitals been made asylums for the houseless and famishing poor, and for those labouring under diseases, often the consequences of misery alone, such as low fevers, dropsy, melancholy, and even mania. In the last three years, I know that many beds in the Cork-street hospital, not occupied in the manner just adverted to, have been kept empty, wholly in compliance with the opinion of the ultra-contagionists.

An experience of nearly forty years, as student and physician, in dispensary and fever hospital practice, enables me, without hesitation, to give it as my opinion, that the formation of medical districts, to each of which a fever hospital, dispensary, cowpock institution, with surgical beds to the number of six in each, would be a very great improvement; and I have no doubt that under such an arrangement, one fever hospital on each side of the Liffey, with a dispensary and soup shop in each parish, would be found sufficient for the sick poor of Dublin during the fiercest outbreaks of epidemic diseases; and that after these extraordinary swells subside, the bedsteads in such hospital, whether surgical or medical, might be most advantageously occupied by those labouring under parturition, accidents, or chronic disease; or, if disengaged accommodation should still remain, by the houseless and unemployed tradesman, predisposed by want to mental and bodily disease. As physician to the chief dispensaries of Dublin at the close of the last, and beginning of this century; to the Cork-street Hospital from its foundation until July last, and as one of the officers of Health in St. Peter's parish during the prevalence of the epidemic of 1817, 18, and 19, I have collected facts on this subject, from which alone these statements have been made.

In times of great emergency, as in 1818, 19, and 26, nearly 500 patients have been accommodated in the Cork-street fever hospital by the aid of tents, pitched on the enclosed grounds, but the wards themselves can accommodate from 240 to 280 patients. The apartments of the registrar, two apothecaries, two housekeepers, and head-nurse, together with those of the nurses, take up perhaps a tenth of the whole. Great pains have been taken for the ventilation of the wards; there are both fixed and moveable baths. The outbuildings consist of a laundry, with a steam-engine, and washing machine; of lodges for the porters, one at each gate; stables, and coach-

houses. The latter are occupied by the servants engaged in the laundry, the porters, &c. The grounds are partly meadowing and partly tilled for the use of the resident officers. All the above houses belong to the Institution.

With respect to the effects of contagion amongst the medical officers, to fever hospitals, and their longevity, it may be stated that of the three physicians and surgeon first elected to the Cork-street fever hospital, all are still living, except Dr. Mills, who died of chronic disease long after he had resigned his office in Cork-street, and which he did not hold more than two years; Dr. Barker was attached to the hospital from its beginning, for twenty years; Dr A. B. Colles, as surgeon, about three years; and myself thirty-one years. All the medical officers, however, attached, or subsequently added to the Cork-street fever hospital, before 1823, or at the first opening for the reception of patients, were attacked more or less severely after the commencement of their duties there, or of their attendance at the houses of the sick poor. It was in this way that Dr. Lee and Dr. Lynch contracted the malignant typhoid disease, of which both died a few weeks after their election; they were the only physicians in the Cork-street fever hospital who died of disease so contracted. Dr. George Hagan died, I think, of chronic disease, which was the result of long-continued exertion, as physician to it, but I believe that effect was aggravated by the baneful influence of a contagious atmosphere in the dwellings of the sick poor. It is moreover very remarkable, and a fact highly instructive on the subject of contagion, that none of the junior physicians have been attacked with the prevailing disease since the unprecedented revolution towards malignity, which occurred in 1823. And, though many have been added, and some of them were transferred to Cholera hospitals since 1832, I have not heard of any of those being attacked with symptoms of the epidemic.

From the annual reports of the average number of days each patient remained in the hospital, it appears it was nearly the same in 1831, and in the preceding year, as in the years 1823, 4, 5, when, as may be seen by reference to the reports published of these three years, that the pestilence, with many of the characteristics of that which prevailed in the year 1831, and each succeeding year since. The correspondence, however, between the average mortality in these several years of pestilence, is more remarkable than the length of time the patients remained in the hospital. (See report for the year 1828, page 8.) That mortality as 307 deaths, to 3317 recoveries, or 1 to $10\frac{147}{307}$, exceeds that of any other year from the opening of the hospital, and is nearly the same as happened in the three years, 1823, 4, and 5, when pestilence of the same characteristics as already intimated, prevailed. The average number of admissions into the Cork-street hospital, during the three years 1823, 4, and 5, likewise, as may be seen by the general retrospect at the 8th page of the report of 1828, was nearly the same as in the year 1831. This parallel is of great importance, as will appear more manifest when the symptoms of the epidemic of 1831, even as they are detailed in the report for 1831 are compared with

those of the epidemic of 1823, and with those of every succeeding year since. (See 2d section, page 35.)

The medical report for 1831, quoted in the 2d section, though it was written avowedly to show that no extraordinary epidemic then prevailed, yet detailed decided symptoms of malignant cholera; of late more properly designated malignant diarrhœa.

In the same report, too, may be seen, not only proofs of the existence of the malignity of the epidemic which afterwards ravaged the country so dreadfully, but also the very same arguments which I employed in addressing the committee, to urge them to investigate its nature, and which I did chiefly with a view to induce them to relax those restrictions which retarded immediate admission into the hospital; and owing to which restrictions, as I am ready to show, several patients died of malignant cholera, in 1831, 2, 3, and 4; but on the other hand many, in the incipient stage, were saved by speedy admission.*

The average number of admissions into the Cork-street hospital, and deaths during the three years, 1823, 4, and 5, as may be seen by consulting the synoptical table at the 8th page of the report for 1828, already referred to, were nearly the same as in the year 1831. That parallel, too, is of great importance in determining the vital question, whether or not the epidemic of 1832, was or was not in the Cork-street hospital in 1831.

The number of patients annually received into the Cork-street fever hospital is daily entered in the registry, but the disease of each patient is not particularized, an omission greatly to be deplored at all times, but especially in the last five years. At all times such statistical information would have been a valuable desideratum to practical physicians, and medical annalists. It would have acquainted them with the most general form of endemic and epidemic disease, in antecedent years, and with the adventitious circumstances and symptoms, which gave to it a designatory epithet, (e. g.) when small-pox, measles, scarlet fever,, influenza, cholera, &c. prevailed. This, I suggested to the managing committee of the fever hospital many years ago, and in September, 1834, at the instance of the able and, I believe, truly humane chairman of the committee, of the House of Commons, (Mr. Warburton, by whom it was proposed when I was examined by him,) that a column should be in the registry, on which the name of the disease should be inserted, opposite that of the patient. This would have prevented in a great measure, or wholly, the public embarrassment that ensued, first, by showing that the epidemic then, though more malignant than at later periods, had occurred much earlier, and, secondly, though previously under a milder degree than in the last five years, in most cases still, that by then studying it much valuable pathological and therapeutical instruction might be derived, and have been applied subsequently with great advantages to the prevention and cure of the more malignant kinds. This injurious omission in the registry of the Cork-street hospital, should be immediately rectified, to prevent further evil consequences.

* See my comparative view of Cholera, Dublin, January 1832, pag, 16, 17, 18, and 19.

None but those who require gratuitous relief obtain assistance from this institution. The sick person sends notice to the hospital, which is served on one of the physicians on extern duty, who visits the applicant, and gives an order for admission if it is not opposed to any mandate of the managing committee. The order for admission must be signed by the visiting physician, at the residence of the patient. But this regulation, though intended originally for the exclusion of persons not labouring under infectious fevers, yet from the acknowledged difficulty of distinguishing, at least at the commencement of fever, between those produced by contagion and by other exciting causes, has wholly failed in that respect; moreover, it has become a very injurious regulation in many instances, by rejecting those who seek admission at the hospital gate, or lie in the neighbouring streets, who are often ejected from their lodgings for either non-payment or from being thought sources of contagion. Such events I have known to happen every year in the last ten, and many patients to have died neglected and unsheltered, whilst numerous beds in the hospital from which they were turned away were vacant. This abuse should be immediately corrected to prevent further mischief arising from it. Besides, although there is, literally, no limitation in the rules and regulations of the hospital to the admission, of the objects of charity, the sufferer living within the Circular-road (i.e.) in Dublin; yet these objects of the charity were wholly lost sight of since malignant cholera prevailed, and in a greater or less degree supervened upon almost all contemporaneous diseases. Whatever appeared to the theory or the alarm of the visitor to be asiatic cholera, was of course rejected, in obedience to the mandate of the managing committee, and at a time when the hospital was most needed was it most inoperative. This appears to me a serious abuse, and directly at variance with the principles of the institution. The limitation of admission to patients whose residence is within the Circular-road, also requires to be reconsidered, because it has been fatal to many who were rejected after being removed from the country to seek admission.

The Cork-street fever hospital makes no provision for extern patients. If a dispensary and cheap provision store were connected, great advantages to the poor might be thus derived, more especially in those outbreaks of epidemics, obviously produced by famine, such as occurred in 1817, 18, 19, and 20. During the prevalence of famine and succeeding pestilence in 1817, 18, 19, I saw in Peter's parish very great advantages from supplying the sick at their own houses with the necessaries of life, and administering such remedies as actual disease demanded.* The fever hospital does not receive any case which may not come under the head of "Febrile disease;" (according to the opinions of the Committee which unfortunately they have not been able to define with any degree of accuracy, and as may be seen in the preceding part of this sketch,) if

* See my reports for the years 1820, 1821, and 1823.

the principle of this restriction had been acted upon since 1823, by any one well-acquainted with the real state of the case, the worst cases of the sick poor labouring under epidemic and pestilential disease, not being fever, must have been rejected, as happened with respect to malignant cholera, for 1832, 3, and 4.

There also appears from the facts already stated in the second section, to have been a gradual change in disease towards that called Asiatic cholera, produced in my opinion, by changes, however subtle, in the constitution of the air, assisted in their operation by the local miseries of the country.

Generally speaking, potatoes, and potatoes without anything else, are the food of the Irish poor, and even these are most deficient in quantity, and often of a coarse quality. I do not think the full grown potato unfit for food at any season of the year, at least till it has been exhausted by its vegetation, which commences in the spring. The unripe potato, or the exhausted potato, which happen about the same period, I believe to be a common cause of disease among the poor. I am sure the use of them at such periods has been a fruitful cause of disease at all times, but more especially since our epidemics have assumed the characteristics of malignant cholera. That a potato in its perfect state is a wholesome food for the human species as any other article either animal or vegetable, I am induced to believe; but being taken alone by perhaps 7-10ths of the poor of Ireland through the entire year, it predisposes, or actually excites disease, especially in the season of its immaturity or decay to a greater extent than in any other country not so dieted. The greater prevalence of cholera, common and malignant, and of other diseases of debility, is chiefly referable, I think, to that cause. And whether the greater prevalence of such pestilential disease in Ireland, is rightly to be considered the cause of dropsy to a greater extent amongst all ages in Ireland than in England, or should be traced back to the causes of these pestilential diseases themselves, it cannot be denied that whilst dropsy in England is confined either to the intemperate or the aged, numbers of young persons, living entirely on potatoes, and without the means either of over-eating or drunkenness, the frequent cause of dropsy, sink every day, by that mortal disease, in Ireland, into their graves.*

In the famine of 1817, 18, and 19, the poor were driven to the use of all green vegetables they found within their reach, and the succeeding epidemic, greatly enhanced as it had been by that circumstance, assumed forms of peculiar virulence; particularly diarrhœa, and other forms of bowel complaints, from the use of some of them more noxious than the rest. A mixture of fresh animal and vegetable food in generous allowance, appears now, I think, by the universal consent of medical practitioners, and writers of reports on the epidemics of this country, to have been not only preventive but curative, when judiciousiy administered. In the epidemic of the last four years, fruits, and some vegetables, especially the potato in its exhausted or unripe state have

* See my observations on dropsy. Part I, Dublin, 1823, pag. 48 to 108; also Part II, Dublin, 1829; pag. 209 to 238.

been found to predispose to an attack, and were often deemed the chief causes of fatal ones. The most general causes of actual disease amongst the poor of Ireland, is, I believe, want of sufficient sustenance and of remunerative labour; likewise the use of noxious ingesta, whether bad food, or ardent spirits, to which they often resort, to blunt the feelings of hunger and of misery.

The excessive use of ardent spirits still prevails, but happily seems on the decrease. Lunacy and idiocy are often the result of the abuse of spirituous liquors; but the disease denominated *Delirium Tremens*, the well known consequence of that abuse, is becoming more frequent. Spirituous liquors seem, though very frequently are not, the sole cause, as the quantity of ardent spirits drank is sometimes small in proportion to the quantity of beer or porter. *Delirium tremens* is often fatal, sometimes terminating in paralysis, of body, or mind, or of both. Whether these cases of idiocy or palsy, are directly or indirectly produced by the use of ardent and fermented liquors, I cannot say; but the habitual excess which leads to them is very generally incurable. Fermented liquors, even the abuse of them, are certainly less pernicious than ardent spirits; but a substitution for both in the beverage of the poor must be I think, a great desideratum in ameliorating the condition of the Irish poor. I have no doubt that ardent spirits are frequently resorted to by the poor, (according to their own well-known phrase) "to drown grief," or in other words to gain, by inebriation, a respite from the painful sense of the want of everything. I do not doubt that it would also much conduce to the health of the poorer classes, if beer could be substituted for spirits; but until the condition of the poor shall have been ameliorated, I fear, for the reasons already intimated, that the possibility of such substitution would be very doubtful.

Although I think that the cold and damp of the climate, and the ardent character of the Irish, along with the wretchedness of the poorer classes, have produced a common and excessive use of ardent spirits, which it would be extremely difficult to check; yet I feel certain that the production of any cheering and nutritious beverage, within the means of the poor, would be most desirable; and that very many who now leave their reason, with their pence in the whiskey shop, would gladly mend their ways, if they could bring home a comfortable supper for themselves and their families. But, I greatly fear that it would be scarcely possible to reduce the price of tea, coffee, or cocoa, so very low as to bring it within the reach of the Irish poor. It is, therefore, with infinite pleasure I suggest a preparation of dandelion, which, in appearance and flavour, is very like coffee, and which might be produced so cheaply that even the most wretched could easily procure it. Of the benefit of the root of the *red stemmed dandelion* (Taraxacum), prepared as it may be very cheaply for the poor, in the greatest abundance in autumn, to provide against the periodical famine of the succeeding year, I can now speak with full confidence, from very extensive experience of its use under the form of coffee, both for preventing and curing many other stomach and bowel complaints besides cholera, which in the seasons of famine are the harbingers of dropsy and marasmus, to an extent unknown in

England, or any other country, where such constant misery and frequent visitations of famine do not occur. I may add that I have been recently informed by some eminent Physicians that they have employed dandelion coffee in their own cases with the greatest benefit, and have since more fully proved its efficacy amongst their patients. Further particulars of its preparation may be seen in my Pathological Observations, part 2, Dublin, 1829; and part 3, 1830. As to its general utility both in diet and medicine, see Dr. Paris's Pharmacologia.

The want of work causes much more mental and corporeal disease amongst the poor operatives of Dublin, than the manner or materials in which they have been employed. This has been always evident in the rise and growth of all our epidemical and pestilential diseases, and found to be almost as deleterious as even deficiency of food, or of other necessaries of life, which are besides intimately connected with dearth of employment. The famine fever A.D. 1827, was clearly the result of want of employment, the prevailing sickness being then obviously excited by it, especially amongst the English and Scotch operatives, who were forced of necessity to work on the roads for food; and who in leaving their looms and other modes of manufacture, relinquished with them all their previous hopes and habits. The rise and growth of pestilence in Dublin for the last thirty-seven years is, I believe, mainly attributable to similar causes. There is, I am sure, much less ground of complaint upon the subject of filth and imperfection of the pavement of lanes, stagnant water, &c., than the public has been generally led to suppose.

Neither clergy nor laity of any persuasion have interfered, unsought for, with the patients during their illness, in the Cork-street hospital; neither have theological or controversial tracts, of any description, been circulated there of late years; but the want of having chaplains of the leading persuasions and sects, attached to the institution is a great injury to it, insomuch that I have often seen the tranquillity of patients destroyed, and their recovery materially interrupted, by not having their own clergyman, at times when they anxiously wished for him. This want should be provided for. I stated this orally to some of the managing committee many years ago, but it is still in existence.

All the medical officers are graduates of the colleges after which they are respectively denominated; but, I believe, they are not all licentiates. The medical duty is extern and intern, (i. e.) visiting the applicants at their abodes, to see if they are proper objects for admission, and attending the patients when received into the wards of the hospital. Of the physicians, three attend at the dwellings of the applicants, and three attend at the wards of the hospital. The intern and extern duty is alternated every two months in succession. The hour of attendance is 11 A.M., and 7 o'clock P.M., and, I think, sufficient time is generally allowed. I am not aware of any complaint having been made by the poor to the controling power. A nurse-tender is always in attendance, and administers the medicines to the patients; the apothecary dispenses them. (See post, page 54.)

For how many years after the opening of the Cork-street fever

hospital, no salary was allowed to the physicians, I cannot recollect; but a salary has since been given to them. At first it was £20 per annum. This, however, has since been gradually increased to £100, late Irish currency, and has been the maximum, at which it has stood for several years. This is the only allowance to the physicians. The Grand Jury has never exercised any control, neither does it appear that its members have any; but I believe such a control is vested in the government; through whom and by whose sufferance alone the presentments pass for those parliamentary grants, on which the institution mainly depends for support.

The medical and all other officers are appointed by the committee, consisting of the trustees and six other persons, elected annually by the managers themselves. When a vacancy occurs it is made known through the newspapers. It would be highly desirable that these appointments should be subject to the approval of the Lord Lieutenant and College of Physicians. It is necessary that the candidate physicians should be Doctors, or Bachelors of Medicine; a diploma from the College of Surgeons is required from the surgeon; a diploma from a School of Midwifery is required from the accoucheur; and letters testimonial from the Apothecaries' Hall, from the apothecaries or dispensers. There is not any limitation as to the officers' age—there is not any retiring allowance.

The Cork-street hospital, one of the largest fever hospitals perhaps in Europe, if under a more liberal direction, might, with the greatest advantage to the immediate objects of the institution, be made a most effective school for medical and surgical instruction. The extreme wretchedness and poverty of the district in which the hospital is situated, always produce in its wards an abundant source of every variety of the prevailing epidemic. Few are the cases which would not afford abundant subject matter for an instructive clinical lecture; and, I may add, that very many are the cases to be met with in that hospital, for which a more watchful and intelligent attendant than the common hospital nurse-tender must be required. Nor would the advantage to the immediate objects of the institution, by the admission of students, stop even here; for it is my conviction that the pupils would give to the physicians, as in the Meath hospital, Stevens's, Mercer's, Sir P. Dun's, very much more than an equivalent for the salary they now receive. Thus a very important saving would be effected, or, in other words, a new fund would be created for extending the benefits of the institution. I have repeatedly sought those advantages, for my pupils and for the hospital, as well as on my own account, but have been as often refused.*

The patients in the Cork-street fever hospital are invited by placards through the wards to prefer any complaint for ill-treatment by the

* When lecturing on the practice of physic, in some of the private schools in Dublin, (e. g.) in the Peter-street or Eccles-street School, the advantage to my pupils of attending the wards of the fever hospital would have been great. The injury done by the refusal was, therefore, very material.

medical officers, to the managing committee, or monthly visitors; but I am not aware of any such complaint having been made; neither am I of any secret influence or circumstances to deter them from giving such information.

The medical officers of the Cork-street hospital are not bound to give vaccine matter gratis; I think a dispensary for such a purpose might be advantageously attached to such hospitals, which should contain two or three beds for patients, or accidents requiring particular attention. The medical officer has not been in the habit of inoculating for small-pox. My opinion of vaccination, and how far preventive of small-pox, is the same which I expressed in my observations on the varioloid disease, published Dublin, A.D. 1820; and as it accorded very generally with the candid and intelligent reports of several respectable medical observers, published at that time throughout the kingdom: I shall quote it here in the same words, viz.:—"Small-pox appears after vaccination in but small proportion to the number that enjoy perfect immunity from that antidote, and even in this small proportion the supervening disease is so mitigated as in general to cause slight sickness only, on the 7th or 9th day, and very rarely consecutive fever." My objects, however, in that pamphlet were to show, by experiments I had made, that cases of eruption after vaccination, which had been confounded with chicken-pock, swine-pock, &c., were genuine cases of small-pox; an opinion which has since been fully corroborated. Small-pox after vaccination having been urgent in many cases, some of them fatal, the efficacy of the antidote was questioned by the families who had thus suffered. I believe the confidence of the public in the efficacy of vaccination is rather increasing than diminishing. But as to how far it would be advisable to prevent those who still doubt its efficacy, from inoculating with small-pox, I do not feel authorised to express an opinion.

Wine is given on the order of the physicians.—For the last five years the quantity ordered by me has been very small, owing to my substitution of dandelion coffee for it. This may be seen by comparing my diet tables in corresponding months in which I employed dandelion coffee in lieu of wine. Not only was the mortality diminished in my wards in those months when dandelion coffee was prepared according to my directions, and whilst it was given in lieu of wine, but it was relished by the patients. Moreover, as stated in my publications, 1829, 30, and 32, it relieved nausea and vomiting after all other means failed.*

There is a regular dietary divided into low, middle, and full diet; but there is none for particular diseases; the managing committee having, in this instance also, acted under the fallacious opinion that contagious fever was the only disease to be found in the wards of the Cork-street hospital; a fallacy which they, as well as the physicians, might have detected. Some extra comforts, however, are allowed, such as a wet nurse or arrow-root, which I suggested for the new-born children of mothers af-

* See third part of my Pathology, Dublin, 1830; and Comparative View, Dublin, July, 1832.

fected with bad fevers, or pestilential disease, the suck in such cases being either deficient or depraved, and I had often found it to be fatal to the infant. But there are other extra comforts, however, which I also suggested, such as tea, dandelion coffee, and sugar, which are not allowed; and I have known numerous cases in which they were urgently required.

There are monthly reports as to admissions, discharges, deaths, which are printed, and made known to the public in general. But the minutes even on medical subjects, have been kept secret from the physicians; a circumstance which must be at all times detrimental to the reports. Moreover these reports are subjected to alterations by the managing committee, who are obviouly disqualified for such censorship. The clergy, of all persuasions, medical men, gentry, &c. might be formed into a Board of Health in every district. They would, I think, be qualified and willing to assist in a more minute investigation of the wants of the poor.

I believe the future support of the Cork-street fever hospital will depend, as it ought chiefly, on good faith in keeping the original rules and regulations, as on that the private bequests and public grants have been hitherto made.

In concluding this hurried sketch, I feel most sensibly how very much its numerous defects need apology. The importance of the subject, whilst claiming the highest order of medical knowledge, I could scarcely hope my utmost efforts adequate to its perfect development; and in attempting to compress it within the narrow limits prescribed to papers offered to the College of Physicians, or to the sections of the British Association, it must have been further injured. Still the kind indulgence which this view of a subject so generally interesting requires, will not, I am persuaded, be denied to an attempt, however imperfect, to discharge a bounden duty.

Although I may fail as to other objects, perhaps too ambitiously entertained, yet if I shall realise the leading one, namely, parliamentary investigation, in the course of the next session, of the subject of medical statistics in Ireland, and of the mischievous abuses arising out of the neglect of them, I shall consider any labours of mine fully remunerated.

Hitherto my memorials to the Irish government, the College of Physicians, and the managing committee of the fever hospital and house of recovery, Cork-street, were dictated by my anxious desire for rigorous and impartial investigation of the questions to which they referred. On all those occasions that investigation was denied, and public injury and private injustice were allowed to escape the test of truth. To bring them to that test has led me to persevere, and, relying on its efficacy, I do not despair of ultimate success.

P.S.—The appendix notified in drawing up this sketch is postponed, in expectation of freer access to the annals of the Cork-street hospital, from which it will be taken, and of the replies also of a category for rural districts, with which, at their request, I furnished the Commissioners of Poor Law Enquiry. In the meantime, my dissertation on the Institutes of Medicine, published in 1826, and my Comparative View, January, 1832, will be substituted for that appendix; both these publications being intimately connected with the leading subjects of this sketch.

CORRIGENDA.

In page 10, last line but seven, for "primum functum," read "primum punctum."

In last line, same page, for "laxitives," read "laxatives."

In page 37, first and second line, for "had been for six days before with vomiting," read "six days before admission, with vomiting, &c."

In page 14, line eighteen, for "Dr. J. Bastock," read "Dr. J. Bostock."

APPENDIX.

COMPARATIVE VIEW

OF

CHOLERA MORBUS.

COMPARATIVE VIEW

OF

CHOLERA MORBUS,

IN THE

AGGRAVATED FORMS THAT DISEASE HAS ASSUMED DURING THE LAST THIRTY YEARS IN IRELAND, AND DURING THE LAST FIFTEEN IN OTHER COUNTRIES, ILLUSTRATED BY CASES.

BY WILLIAM STOKER, M. D.

HONARARY FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, MEMBER OF THE MEDICAL SOCIETY OF EDINBURGH, AND OF THE ASSOCIATION OF THE MEMBERS OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND, SENIOR PHYSICIAN TO THE FEVER HOSPITAL AND HOUSE OF RECOVERY, CORK-STREET, TO THE MOLYNEAUX ASYLUM, AND FORMERLY TO THE DUBLIN GENERAL AND MEATH-STREET DISPENSARIES, &c.

"Nil tam difficile est, quin quærendo investigari possit."—Ter. Heaut.

DUBLIN:

RICHARD MOORE TIMS, 85, GRAFTON-STREET.

1832.

Printed by P. D. Hardy, 3, Cecilia-street.

ADVERTISEMENT.

My attention having been called to the remarkable similarity between the symptoms of the Indian and Continental cholera as they were detailed in various publications and those of the pestilential fevers of this country, whose rise and progress I had witnessed; and having for some years before those reports became so intensely interesting, perceived a decided tendency in the epidemic constitution of the air here to well defined symptoms of cholera morbus, and heard of the same general tendency during the same time over the greater part of Europe, I was early induced to attribute the aggravated forms of that disease and their fatal consequences, partly to the growing virulence of the epidemic tendency every where, and partly to those local circumstances which attracted it to particular places, and increased its malignity. The epidemic tendency to cholera morbus appeared to me to be manifested by its appearing as a distinct disease much more frequently than usual, and still more so by its almost universally attacking persons much debilitated by disease, reduced by want, or broken down by courses of dissipation. Indeed during the last six months or in the autumnal months of any of the last three years, I have rarely known of a death where cholera morbus did not appear in the course of the disease or at the closing scene. Something like this must have occurred in those places where numerous deaths from Indian cholera were reported last year, (1831); but, where notwithstanding the bills of mortality were not fuller than in the year preceding when cholera morbus was hardly recognised. Such considerations, as well as that the disease attacked the lower animals as generally as the human species, led me also to suppose it to be identical with common cholera; and here

and elsewhere to be rather epidemic than contagious. Succeeding reports appeared further to confirm these opinions; and the interest which has attended the subject since the reports from Sunderland commenced, have obliged me to review my previous opinions with still greater care. Ever since I have observed a remarkable correspondence between the growing malignity and mortality of the cholera morbus in both places; and in private practice amongst the more wealthy I perceived its inroads upon the current of disease wherever the constitutional vigour was exhausted, or where the course of disease itself was not so determined or rapid as to resist any extrinsic impression; and at the hospital I learned that the general mortality as well as the average mortality, was much greater than it had been in the corresponding months of former years, the prevailing affections being bowel complaints.* On resuming my intern attendance at the hospital on the 4th of December last, the general character of the disease in my wards concurred to strengthen my previous impressions, and I felt it my duty to suggest by letters addressed to the Managing Committee some regulations, with a view to existing circumstances. This treatise which is little more than extracts taken from these letters and a report of the month was the consequence. I trust my objects will plead an apology for publishing it in such haste. These are to detail a certain number of the cases as specimens of indigenous typhoid cholera and the mode of treating it, that the resemblance to the disease in Sunderland may be examined by those qualified by experience in the latter place, and likewise better enable others to judge how far the peculiarities in the different places are produced by peculiar localities; or should the pestilence proceed accumulating force as it advances by carrying along with it the transitive characters of the moral or physical evils of other countries impressed on it, we shall, by having some previous standard to refer to, be better able to appreciate the superior degree of its violence; and should it ever please the Provident Ruler of all events to let it

* *Extract from Registry of Cork-street Fever Hospital.*

	Admissions.	Discharged.	Deaths.	Average Deaths,
November, 1830.	....	252	17	1 in $17\frac{14}{17}$
December, do.	...	245	26	$10\frac{11}{26}$
November, 1831.	288	218	31	$8\frac{1}{31}$
December, do	275	295	31	$11\frac{16}{31}$

thus reach our country, we shall be prepared, by seeing the actual extent of its increase, and more deliberately avail ourselves of our resources to remedy that increase. In the mean time I am very anxious to have those restrictions on the free admission to the Fever Hospital and House of Recovery, Cork-street, removed, in order to meet the increasing urgency of the demands, by patients affected with the prevailing distemper, and that post-mortem examinations, with the consent of their surviving friends allowed; restrictions, which are in my opinion, at all times opposed to the intended objects of that institution which are to relieve the poor affected with fever, and to promote and diffuse medical knowledge. But at present from the rapid course of typhoid cholera and the urgency of its symptoms any impediment to free and immediate reception must be highly injurious to the sick; and certainly there never was a period when post-mortem examinations were more desirable, whether we require proofs of the identity of the foreign and domestic cholera, or of the causes of that destructive disease.

York-street, 21, January 11th, 1832.

COMPARATIVE VIEW,

&c. &c.

THERE never, perhaps, was an appeal more calculated to excite the sympathies of those entrusted with the care of the health of mankind, and one more likely to call forth the best energy of their minds, and cause them vigilantly to look back to all their former experience for future conservation than that conveyed by the reports circulated of the ravages of an aggravated form of cholera morbus, by which whole towns and villages were depopulated, and by which terror was spread amongst the most distant nations. But no circumstance connected with these reports appeared to me to have contributed so much to that general consternation as the confident statement that this disease is totally distinct in its nature from any that has hitherto appeared in Europe,* that European

* The following extracts from the Boards of Health in London and in Dublin, appear to me to justify the investigation I have proposed:—

"From the security which has hitherto been obtained by quarantine, there is no immediate urgency for making public the rigid rules originally laid before the privy council by the board: but as the disease is believed to have pervaded nearly the whole of the Russian empire, and its progress westward is unchecked, the board requests permission of their lordships to have printed copies of the report now presented, together with such a portion of the rules and regulations formerly submitted to their lordships, as are herewith annexed, for the purpose of general information respecting the nature of the pestilence, and pointing out the preliminary line of conduct best calculated to prevent its propagation in this country. The circulation of such information among medical practitioners is further deemed desirable, from an erroneous notion very prevalent of a resemblance between this disease and the common cholera morbus of this country, which almost invariably appears at this season of the year, and which, from the state of the

skill or European experience could neither prevent nor cure it; and that having advanced from Asia toward the west and north west, visiting many countries nearly in a right line, its progress must have been effected by contagion, and hence, likely to continue its pestilential course until all the civilized world shall become a prey to its devastation. Since these reports were first circulated, I have felt it my duty as a physician, engaged for almost thirty years in the largest institution in Europe for the prevention and cure of epidemic diseases, to examine attentively the objects of general alarm, and if warranted by my experience, to reduce them from their imaginary to their real magnitude. With these views I was first led to attempt ascertaining from the best authenticated accounts what are the constant and essential symptoms of this most afflicting and formidable scourge of the animal creation, (for it was stated to be as generally epizootic as

weather during the present summer, is likely to occur with unusual violence."—Papers relating to Cholera Spasmodica, printed by authority of the Privy Council—London, 1831, page 2.

"The formidable disease now distinguished by the name of spasmodic cholera, commencing in the East Indies, has, in the course of thirteen years passed over a large part of Asia, and advancing with a gradual, but steady progrees westward, has entered Europe, and reached the shores of the Baltic. The painful symptoms of this malady, its very general extension through any community which it invades, and the extraordinary mortality by which it is accompanied, have made it the subject of great apprehension in every country toward which it has approached.

"As spasmodic cholera appears to have been little restrained in its progress by any circumstances of locality, climate, or season, fears are but too justly entertained that it will extend to Great Britain and Ireland; and the British government has adopted such measures as practical and professional experience could devise for preventing its introduction into these islands. These measures have been detailed in reports issued by the Board of Health in London, in letters addressed to medical officers in all parts of these countries by the Army Medical Board, and in the proclamation circulated in maratime places relating to the rigid enforcement of quarantine, and the detection of spasmodic cholera on its first appearance.

"Judging from the frequent recurrence of epidemic fever of late years in Ireland, it is much to be apprehended that the same causes which have contributed to extend fever, would also render spasmodic cholera epidemic in this country. This view of the case, although leading to gloomy anticipations, is in one respect satisfactory as a preventative system founded on experience and approved utility, has been gradually adopted in Ireland, and a large portion of the measures composing the system would be applicable to the prevention of spasmodic cholera."—Report on the Prevention of Spasmodic Cholera, by the Board of Health in Ireland—Dublin, 1831, page 5.

it was epidemic,) and discovering as I proceeded, that although some of its symptoms are not to be found in the nosological definitions of our indigenous cholera morbus; yet that the deficiency might be readily supplied from the genuine characteristics of that aggravated typhus fever so long known in Ireland, and which, from the growth of similar causes appears rapidly progressing in England also.*

While the reports from Sunderland and the neighbouring sea-port towns, assimilated the essential symptoms of all the forms of blue or typhoid cholera, they have encouraged me in the hope of being able to separate them from the temporary aggravation of their virulence, or the adventitious increase of their number, which climate or local circumstances may have produced. In attempting an object of such importance as that which would effect a reciprocity of those benefits to be derived from the experience of physicians in different countries for the prevention or cure of this dreadful disease, I shall proceed to the investigation of its causes, with that view, freely inviting others to join me, as I have the Managing Committee of the Fever Hospital and House of Recovery, Cork-street, in two letters recently addressed to that board. These observations are offered as preliminary and introductory, to the extracts which are intended to form the chief part of this little essay.

The question, whether cholera be essentially contagious in the first instance, or propagated by miasm, arising in the later stages of the disease from the sick body, though of hardly less importance either in theory or practice, may be more advantageously discussed at a later period of our inquiry into the similitude of the causes, and between the essential characters of typhoid or blue cholera, and those combinations of epidemic fevers which the publications of Drs. Boat, Rogers, and O'Connel, and of the physicians of the Fever Hospital and House of Recovery in Cork-street, have long since described and authenticated. Besides the same investigation into the comparative influence which atmosphorical distemperature, or malaria, or contagion, may have had, respectively, in producing or propagating the pestilential epidemic in question, may perhaps better enable us to identify its causes with those of the pestilential dis-

* See my Report from the Fever Hospital and House of Recovery Cork-street, 1828. Page 104 to 111 inclusive.

eases which have been well known and successfully treated in this country. As to the immediate causes just mentioned, I may observe, that their sphere of action and their duration have always appeared to me to depend upon others more evident, though more remote, and if the very existence of contagion itself, and its capability of propagating virulent diseases be found not to be first causes, but only the effects of them, those who are contemplating measures for the prevention of epidemic or pestilential diseases in this country, should inquire not only what is the immediate cause of the disease, but further, how that immediate cause has been itself produced.

Having in my letters to the managing Committee (which I intend to quote) adverted to the striking similitude between the symptoms during life and the appearance on post-mortem examination in the cholera spasmodica of other countries, and in our typhoid fevers, I would here dwell a little on the remarkable coincidence in the pathology of these two denominations of disease, more especially as respects the state of the blood; and I may be allowed to express my satisfaction that the pathology of fever which I advocated many years past, and which has been since corroborated by the experiments of Dr. Reid Clanny, of Sunderland, is now found applicable to cholera also; and that the successful practice of Dr. Stevenson in the West Indies, and of Mr. Searle in the East, is founded on that pathology. In order to show this coincidence more clearly, and my previous advocacy of the pathology of the blood in typhoid fevers, the following extracts must suffice; the first taken from my Report of the Fever Hospital and House of Recovery in Cork-street, for 1823; the second from what has been well entitled by "The Lancet" the most scientific record to be met with respecting the pathology of cholera, by M. Brierre de Boismont. "The opinion, however, that the animal fluids are primarily and chiefly affected in typhoid fevers by the generation or introduction of some poison, has not been adopted by me solely on authority (i. e. that of Hippocrates, Sydenham, Meade, and Boerhaave), or from the analogies just alluded to, but has been the result of the extensive observations on fever, which I have had an opportunity of making, as well in the hospital as in private practice, and from having in different seasons, when pestilential fevers prevailed, witnessed those cutaneous eruptions, internal

and external homorrhages, gangrenes, and even those glandular swellings, by which such fevers, in their most exquisite form, are characterised. In mixed cases too, in which the paramount urgency of the inflammatory affection demanded bleeding, as sometimes happens, I have frequently noticed morbid alterations in the appearance of the blood drawn, totally different from that which is supposed to be the effect of inflammation. On the contrary, the crassamentum was imperfectly and loosely coagulated, or broken down, the livid fragments mingling in colour as well as in consistence with the opaque, sometimes green or yellow serum, or sanies in which they floated.

"During the rise and progress of the *constitutio epidemica* that has prevailed in this country, now nearly fifteen months, giving to almost all febrile diseases an unusually pestilential character, I witnessed, while examining the blood drawn in different diseases, with a view to a particular object, that remarkable changes took place, as the simple fever, which accompanied influenza, assumed either a remittent or a typhoid character; or, I would prefer saying, as the blood was affected either by successive derangements of the organs of sanguification, or by the mephitic effects of contagious miasmata; and as such facts appear to me highly corroborative of the opinion now under consideration, I may be excused for treating them somewhat further in detail.

"In the first or catarrhal stage of this epidemic, the blood drawn was generally found of a lighter colour, and in less consistence than in health, the crassamentum and serum being imperfectly separated. At later stages, the viscera, particularly the lungs and liver, were more frequently engaged. In such cases the blood drawn was generally buffed, the tunic covering, that taken in pulmonary complaints, being superficial, cupped, and white; but the buffy coat on blood taken in hepatic complaints, was much thicker, darker coloured, and of an evener surface.

"As the epidemic advanced, the causes of fever more generally wore the characteristics of pestilence. Such were the worst forms of cutaneous eruptions, purpura, dark and extensive, external and internal homorrhages, fœtid exhalations and offensive stench from the alvine discharges. The blood, whether accidentally effused or drawn for the relief of some local congestion, was always

found morbidly changed, and in proportion to the urgency of the foregoing symptoms, dissolved and discoloured, as already mentioned. These observations will be further illustrated by the cases noted in the different stages of the epidemic.*

"The statement by M. Brierre de Boismont, which is confirmed by the Reports of the London Board of Health, and by other publications of the highest authority, is as follows :—" The blood in patients affected with cholera undergoes remarkable changes; it becomes black, thickened, viscous, and frequently forms a compact mass, separating with great difficulty into serum and coagulum. When the disease has lasted any length of time, no serosity is found in the blood : this ingredient diminishing with the progress of the malady * * * The density and viscous oiliness of the blood are not, however, invariably present, for we have sometimes found it sufficiently fluid, but always of a peculiar brown colour. The blood, bile, urine, and vomited matters were subjected to chemical analysis in Warsaw, without any remarkable result."

Seeing from the foregoing extract the remarkable coincidence between the pathology of pestilential fevers, which I had long since advocated, and the facts stated respecting the blue cholera morbus, I am induced to propose the physiology which I also adopted and published in my Pathological Observations, already referred to; and I offer this on the present occasion, because I conceive it affords a tolerable rationale likewise of other symptoms of cholera, more especially the sudden debility, the failure in the circulation, the diminished temperature and suppressed secretions, particularly of bile, so remarkable in that disease. "Further consideration has induced me to believe that other very important uses in sanguification belong to these organs (the liver and spleen) in consequence of certain changes in the hydrocarbonous principle with which the blood comes charged to the vena porta,† by which it thus becomes fitted for the

* See these cases detailed from the 48th to the 65th page of the Annual Report, A. D., 1823; and for further illustration, the 19th and succeeding pages of my Treatise on Fever. London, 1810. Path. Ob. Part I. Preface, pages 10 to 37. Dublin, 1823. Part II. Preface, and pages 100 to 190. Dublin, 1828. Part III. pages 106 to 124.

† The experiments and observations of Drs. Prevost and Dumas have strengthened these opinions. Vide *Examen du Sanget de sou action dans des divers Phenomenes de la vie par J. L. Prevost et J. A. Dumas Eleve in Pharmacie, Membre de la Societé de Physique et d Histoire Naturelle.*

changes it should undergo in the lungs. By effecting this change too, in the hydrocarbonous principle I suppose that the liver might be deemed the chief secerning organ of fat, and with the assistance of the lungs, perhaps of fibrine, for the necessary supply of which for the different parts of the body, there is no other appropriated apparatus, such as may be found for each of the other secretions, and apparently far less important in the maintenance of life. In this point of view the hepatic system may likewise be deemed a chief source of animal heat, inasmuch, as by favouring the chemical affinity between the elementary parts of the adipofibrinous matter, carried thither by veins, a commencement of that intimate combination takes place, by which, subsequently, in the lesser as well as in the greater circulation, caloric, in consequence of diminished capacity for it in the circulating mass, is evolved, according to the exigencies of life. A theory of animal heat, consistent with those of Drs. Crawford, Skey, and De La Rive,* which will be found further substantiated by evidence derived from observation in the course of diseases. The cases which afford such evidence shall be considered more fully in the next section on pathology; but those to which I would at present refer were those of certain dysenteric forms of the epidemic that prevailed last summer in this country, in which very large quantities of dark-coloured blood were discharged from the mesenteric and hœmorrhoidal veins; and when the temperature of the patients, ascertained by applying the hand to any part of the surface, or to the air expired from the lungs, was so much diminished as to feel very cold to any of the bye-standers who made the experiment. In other cases (but one in particular of chronic hepatitis,) the surface of the body of the patient was cold and clammy, and for some weeks previous to death the colour of every visible part was dark, livid, and cold; the most strikingly remarkable circumstance in that case (and for which I allude to it here) was, that the blood taken some days before dissolution from the temporal artery on account of a sudden appoplectic attack, as it flowed *saltatim*, had the colour not only more like to venous than arterial blood, but was actually as black as ink. See Appendix, Case, No. 1.

* See Crawford in Phil. Trans. for 1781; Dr. Skey's Thesis de Materia Combustibile Sanguinis; also, Prof. De La Rive's de Calore Animali.

"In the former dysenteric cases, there was an evident deficiency of combustible matter (as Dr. Skey, I think, aptly calls it); and in the latter, or hepatic disease, there was as obvious an imperfection in the apparatus provided for kindling that combustible matter into action, and subsequently under its reciprocal influence and that of vital power for evolving animal heat."*

In making those preliminary observations on the causes of the essential characteristics of malignant or blue cholera, and their identity with those of epidemic and pestilential fevers of Ireland, as they have appeared in the Cork-street Fever Hospital, I have studiously avoided those adventitious peculiarities which local circumstances have impressed on them, such as the state of atmosphere on the banks of the Delta or the Ganges; where malaria contended to rival contagion, and when the symptoms of the disease thus produced, evinced how much more they were influenced by the former than by the latter excitement, not only in the rapidity of the fatal result but also in the paroxysmal order in which that event took place. On the other hand, if the patient survived the cold fit, reaction manifested itself by a regular aguish paroxysm which was generally observed even after the epidemic had become pestilential, and had spread to countries far distant from the alluvial soil on the banks of those mighty rivers of the East, where its destructive career had been most remarkable. The same explanation appears to me to be applicable to the difference between the course of the malignant cholera in Sunderland and in Dublin, during the last two months. Moreover the rapid supervention of mortal symptoms, and their striking peculiarities in the Sunderland cholera, so analogous to the effects of mephitic air on animal life, indicates that terrestrial exhalations from the coal-pits, form a chief ingredient in the morbific agency there. When it is recollected that its peculiar malignity has hitherto been confined to the northern banks of the Tyne, to the lowest and filthiest parts of the English-town; and that though Dublin be situated on a flat shore, which the tide occupies but a small part of the day and night, yet as it is in general little affected by intermittent fevers so frequent in the English counties through which large rivers flow, that circumstance must obviously contribute to the comparative se-

* Advertisement to Part II. of my Pathological Observations, pp. xxiv–xxviii.

curity of the Irish metropolis. To the difference in the particulars just stated, I attribute the modification of essential symptoms, or the supervention of adventitious ones, which have led to the supposition of a new disease being at present in the English sea-port towns. At least its distinctness from those I have observed to be indigenous to this country, may I think be thus satisfactorily accounted for.

That an epidemic constitution of the atmosphere tending to produce the ordinary nosological symptoms of cholera prevailed very generally over this hemisphere during the last three years, appears to me to be well established; and though the fact, like many other natural phenomena may be very difficult to account for, lying probably more within the province of astronomy than geography, it may hereafter be found connected with adequate causes. That such an epidemic constitution has prevailed at various times in Ireland too during the last thirty years, but most remarkably in the last three, accords with my experience, and the cases subjoined to those preliminary observations are intended to exhibit the various forms, which our epidemic fevers, under that tendency has assumed within the present month in the wards under my care. I have frequently witnessed such cases in the autumnal and winter months, often indeed much more resembling those reported from India, the Continent, and Sunderland, in minute circumstances, and at so remote a date too, that I should be inclined to denominate the cases reported from other countries Irish cholera rather than by any other name, however the symptoms might be modified by localities, moral, physical or political.

Ninety-one female and twenty-five male patients appear on my hospital journals between the 4th and the 30th instant, and still remaining on that day, twenty-six females and nine males: of the whole, twenty-four females, and seven males were affected with cholera—eight of the former with malignant, and sixteen with common chronic cholera. Of the males, three were affected with malignant, and four with common cholera. Of the seventy-five females, seven died. Of the twenty-five male patients three died, one of malignant, and the other two of chronic cholera. The deaths both of female and male patients, except one from hæmatemeses, (and even that doubtful) were all directly or indirectly the consequence of cholera, either in a malignant or chronic form. Of the remaining cases

of the females, nine were of the typhus gravior, twelve synochus, twenty-four rheumatism, six pneumonia, three hepatitis, one phthisis pulmonalis, one anthrax; and of males not labouring under cholera, four were affected with typhus gravior, two with phrenitis, or brain-fever, and the rest with complications of inflammatory and typhoid disease.

CASES OF CHOLERA MORBUS.

CASE FIRST—BLUE TYPHOID CHOLERA

Catherine Redmond admitted December 3d, aged 30, nine days ill. Her illness commenced after exposure to want, fatigue and anxiety of mind, aggravated by residing in a place she had resorted to as a wandering mendicant, where several houses had been burned, and that in which she slept among the number. She was first attacked with vomiting and purging, severe spasmodic pains in the belly, and lower extremities, particularly the calves of the legs, and with total prostration of strength, from which she recovered after two days, so as to be able to return to Dublin. At present she labours under the symptoms of common fever; face flushed, skin hot, belly costive, restless nights, no appetite, considerable thirst.

Prescribed a draught with castor-oil, a laxative enema in the evening—feet to be fomented with flannel and hot water, L. D.

December 4th.—The aperient medicines operated well, and feels better—Prescribed—Let the enema and fomentations of the feet be repeated in the evening, L. D.

December 5th.—Was attacked suddenly with cholera in the course of the night—the spasmodic pains of belly and legs continue with great severity and accompanied with great pro'tration of strength—skin clammy and under the natural temperature—purging and vomiting of gruel-like fluid frequent; no pulse to be felt at the wrist—countenance anxious and jaundiced, partially of a purple colour, the feet and hands have also become purple. Is much distressed with stricture across the region of the heart and stomach; extreme anxiety of mind without coma or delirium. Prescribed—Let the abdomen be well rubbed three times a-day with a liniment of equal parts of ammoniated and camphorated oil, covered with flannel—prescribed twenty leeches to the epiegastrium.

℞. Pil hyrdargyri grana quindecem, calomelanos grana tredecem.

Opii puri grana duo, syrupi q. s. ft. massa. Tere optime simul et divide in pil granorum quinque, signa, sumat unam omni bihorio.

℞. Mist camphoratæ uncias sex, liquoris ætherii oleosi drachmas duas. spiritus ammoniæ aromatici drachmas tres. syrupi unciam, miscc et signa, sumat unciam cum spumæ cerevisiœ semumcia tertia quaquahora.—Wine, six ounces, dandelion coffee, ad libitum.

December 6th.—Pains and spasms somewhat relieved, and there is

some bile in what she vomits and purges—no improvement in other symptoms; on the contrary, the jaundice and purpura increases and the prostration of strength continues.

Prescribed as yesterday—and let a blister be applied over the right hypochondrium—wine, six ounces.

December 7th.—The violent spasmodic pains continue in the chest, belly, and lower extremities, vomiting and purging less frequent, but the other symptoms not improved. Prescribed a repetition of the medicines, and an enema with assafœtida and æther every third hour.

December 8th.—Died at eleven o'clock, A. M. The surface of the body and extremities became generally purple before death, and like those of others who died of blue cholera, assumed soon afterwards the appearance of a cadaver many days after dissolution.

There was another remark I wished to make on this, the only kind of post-mortem examination the regulations of the Fever Hospital permit, and which I am desirous to record on the present occasion. It is that—on examining the thorax by percussion, the lungs appeared to be generally hepatized; a circumstance which not only tends to identify such cases with those of the blue cholera on the Continent, but also with the epidemic pestilential fevers of this country, as may be seen by examining the cases and dissections of typhus fever given at the second part of my Pathological Observations, as well as the cases and post mortem examination of horses, which may be found from the 66th to 73d pages of my report from the Fever Hospital and House of Recovery, for the year 1828. A healthy boy, two years old, slept with this patient until the day before death, without bad effects.

CASE SECOND—CHOLERA MORBUS.

Deborah Deane—December 8th.—Six days ill of severe cholera, which commenced with painful and violent spasms in the trunk and lower extremities, more particularly of the abdomen and calves of the legs; the spasms were accompanied with vomiting and purging of turbid serous gruel-like fluid, and attended with extreme debility, amounting at the first attack nearly to syncope. The surface everywhere cold—the features shrunk. These symptoms remitted for three days, but returned yesterday with increased violence and debility; she was admitted to the hospital soon afterwards, covered up warmly in bed, rubbed with camphorated oil—turpentine enema administered, and a mixture composed of six ounces of camphorated mixture, two drachms of compound spirit of ammonia, of thirty drops of tinct of opium, and half an once of syrup was administered in doses of a table spoonful every hour. By these means she has been considerably relieved—stomach still irritable and inclined to nausea. Let her have dandelion coffee, and repeat the remedies as yesterday. Flannel waistcoat.

December 9th.—Convalescent, and was dismissed free from com-

plaint, having used no medicine since the last report, except the dandelion coffee which she relished, and it agreed well with her.

CASE THIRD—TYPHOID BLUE CHOLERA.

Mary Byrne, aged 28,—of a thin and spare habit, and previous to her admission to the hospital, had suffered great privations, was remitted from the convalescent wing on the 19th instant, on account of being suddenly attacked with purging and vomiting of gruel-like fluid, accompanied with extreme spasmodic pain in the abdomen, back, and lower extremities, especially the calves of the legs, and with an oppressive sense of stricture at the region of the heart and stomach—features shrunk, skin cold and clammy, abdominal muscles rigidly contracted. Prescribed twelve ounces of blood to be taken from the arm, and the ammoniated mixture, friction and turpentine injections, as may be seen in the foregoing case. A flannel waistcoat, and the limbs to be wrapped in flannel.

December 20th.—Felt considerable relief from the bleeding to the sense of pain and spasmodic stricture. The dandelion coffee and aromatic mixture have agreed well with her, and settled the stomach. The stools are less frequent and more feculent; some urine high coloured, but still scanty; still complains much of debility, and pulse very feeble. Repeat the friction and dandelion coffee. Omit the other remedies. Desirous to have some food and a little wine. Prescribed middle diet and four ounces of wine.

December 21st.—Apparently moribund. Features shrunk, pallid, and somewhat livid; eyes hollow, skin cold and clammy, constant moaning, but speechless; no pulse to be felt at the wrist; no urine passed; stools and vomiting of a gruel-like fluid, but with a greater tendency to green colour than before: abdominal muscles rigidly contracted, and on trying to open the mouth there is some degree of trismus observable. Prescribed a blister over the whole abdomen, and a repetition of the aromatic mixture, friction and stimulant glysters as on the day before yesterday. Six ounces of wine. Low diet.

December 22d.—The blister has risen well; the pulse and temperature of the body have been in some degree restored; the vomiting and purging less frequent, of a greener colour. Can protrude her tongue better; and her speech and swallowing somewhat restored. Prescribed a repetition of the medicines, and the blistered part to be dressed with simple ointment.

December 23d.—Temperature of the skin natural; the colour inclining to purple. Drinks well, but cannot speak—protrudes the tongue, but with great difficulty; it is clean and soft—no vomiting to-day. Takes the dandelion coffee and wine alternately with avidity. One feculent stool in the night; it and the urine were passed unconsciously—but the latter, copiously. Prescribed a turpentine glyster immediately, the head to be shaved and washed with camphorated spirit of wine; a blister to the occiput: fifteen leeches to

the right hypochondrium. Wine to be repeated, and the other remedies as yesterday.

December 24th.—The leeches and blisters have acted well. The countenance is more animated, and the eyes look intelligent. She can speak a little and protrude her tongue better. The skin is cold and clammy, generally turning blue, the hands and feet purple. No pulse to be felt at the temple or wrists; the mind is quite clear and collective, but her voice is very weak, and sounds like approaching death. No return of vomiting, and she takes the wine, aromatic mixture and dandelion coffee with avidity. Prescribed—omit the leeches and dress the blistered part with simple ointment. Repeat the other remedies as yesterday. Wine, eight ounces.

December 25th.—Died at 11 o'clock, A. M. yesterday, having been strongly convulsed about two hours previously, but death was not apparently accompanied with pain. The body and limbs became generally blue before her dissolution, and afterwards had the same general purple colour as the bodies of all others, whether the patients were affected with the simple or typhoid cholera; and this as well as all the other cases of chronic or malignant cholera which terminated fatally this month, added to my regret, and that the restrictions on post mortem examinations in the Cork-street Hospital were continued. I should add, that the surviving friends in no instance objected to such examination, and some solicited it.

CASE FOURTH—OF BLUE CHOLERA.

Charles Kelly, aged 70, admitted December 13th.—Ill seven days of cholera morbus, which commenced with violent pain at his stomach, and spasms at the calves of his legs, accompanied with vomiting and purging of gruel-like fluid, and extreme prostration of strength, which remitted after forty-eight hours, but returned yesterday with increased severity; and the people of the house where he lodged being alarmed, turned him out, and he was exposed last night lying on the common stairs; and I found him just now lying at the hospital steps at the utmost degree of debility: his face and hands shrunk and blue; skin cold and clammy, no pulse at the wrist; voice scarcely articulate. As no time was to be lost, he had some warm milk given him at the lodge, and I ordered him to be carried up and put to bed in one of my wards, wrapt in flannel, and rubbed with warm flannel. Following shortly after, I found the pulse in some degree restored by the warm drinks and friction, and the surface in general, but particularly at the lower extremities, was a dark blue: the temperature of the skin somewhat better, but the prostration of strength continued; tongue clean and red. Spasms and a painful sense of stricture over his belly and chest continue severe, but he has had no vomiting or stool or secretion of urine since the attack on the day before yesterday. Let him have a turpentine glyster, with an ounce of castor-oil immediately and repeated every three hours till effectual; let the

warm frictions and flannels be continued, and let the extremities be rubbed dry with camphorated spirit of wine.

℞. Aquæ puræ, misturæ camphoratæ āā uncias quatuor, spiritus ammoniæ aromatici semiuciam, syrupi unciam, misce, sumat cochleare amplum omni semihorā. Wine, six ounces. L. D. Dandelion coffee.

December 14th.—Symptoms improved in every respect; the injections have operated well, and the alvine discharges are feculent, urine copious and high coloured; pulse distinct, but still feeble, 96—the purple colour of the face and hands is diminished, but continues little changed on the lower extremities; skin warm. Let the remedies be repeated—let him have a large flannel waistcoat.

December 15th.—The choleroid symptoms, except the purple colour of the lower extremities have disappeared; but he complains of cough and pain at the left side of the sternum increased on drawing his breath; tongue white, thirst urgent, pulse 100, and hard. Let him be bled to ten ounces, and have eight ounces of cough mixture, to be used occasionally; the common enema in the evening.

December 16th.—Better in every respect; blood slightly buffed. Repeat the cough mixture. His recovery was progressive, and he was dismissed from the convalescent wing a few days afterwards.

OBSERVATIONS.

The timely application of warmth externally, and of stimulants, was remarkably successful in this case, in producing re-action within its proper bounds; but subsequently the inflammatory affection of the lungs which it excited, demanded venesection in a moderate degree, and the blood was slightly buffed, an event which, as I have stated on many occasions, often takes place after crises in fever, though it would not previously. It was chiefly with a view to such cases as this and others which proceed more rapidly to a fatal termination, that I was led to recommend a more ready admission of patients to the hospital than in ordinary times; and no part of the regulations recently published at the suggestions of Drs. Russel and Barry, appear to me more judicious than those which enjoin ready admission and the conveyance of patients in the horizontal posture.

CASE FIFTH—BLUE TYPHOID CHOLERA.

Thomas Martin, aged 22, admitted December 19th.—Ill five days. I visited this patient yesterday evening at his lodging, 205, Great Britain-street, in a small narrow bed-chamber, in which several others sleep by night. He was lying prostrate; countenance extremely anxious, eyes sunk, features drawn and purple, but interspersed with patches of jaundice; the skin cold and clammy; no pulse could be felt in any part, the trunk in general had the same colour with the face, but the hands and feet were quite purple; no coma or delirium; tongue clean and soft. On the 14th, being the day of his attack, as I learned, he rose in good health and went to Smithfield-market, where towards the middle of the day he was attacked with painful

spasms in his belly and the calves of his legs, vomiting and purging of gruel-like fluid, sudden coldness and prostration of strength, symptoms which continued until the 15th, when the purging and vomiting ceased, and since he has had neither alvine dejection nor passing of urine. The spasms in the trunk are at present under the influence of subsultus and frequent hiccup; but there is no tremor in the hands, and there is occasional tendency to delirium, otherwise there is no change in the symptoms since yesterday; the catheter has been employed since his admission to the hospital; but there was no urine found in the bladder, although none has been passed for nearly three days: swallows well.

Prescribed.—The head to be shaved and rubbed dry with camphorated spirit of wine, also the extremities, and all covered with flannel. Let him have a turpentine injection, with castor-oil, and tincture of assafœtida, and repeat it every third hour till effectual. A large blister to the right hypochondrium. ℞. Misturæ camphoratæ uncias septem, spiritus ammoniæ aromatici drachmas duas, tincturæ opii guttas viginti quinque, syrupi unciam. Misce et signa sumat cochlearia ampla duo cum spumæ cerevisiæ cochleare amplo omni bihorio.—Let the catheter be employed if necessary, after the bowels have been well freed. Wine, ten ounces.

N. B.—These means were prescribed yesterday at his lodgings, but were only partially employed; and there was now directed also a draught, composed of half a drachm of castor-oil, a drachm of oil of turpentine, an ounce of peppermint-water, and a sufficient quantity of mucilage of gum-arabic: this draught to be repeated every fourth hour till the bowels are freed. The belly becoming tympanitic, to be rubbed with oil of turpentine and swathed with flannel.

There was, however, no return of pulse nor improvement in the symptoms afterwards; and though his mind remained clear and he drank well, the spasms increased with the purple colour and coldness of the skin until he died about 11 o'clock on the succeeding morning. Before death, the whole surface of the body became of a deeper purple than even before, and on inspecting the cadaver attentively, though not half an hour since dissolution, it has the appearance of having been dead much longer than the whole term of the illness that preceded it, presenting such an appearance, that the porter, who has been for many years engaged in the hospital at such employment, says he was never so terrified in carrying down a dead body. Dr. O'Reardon happened to be present at the time of the inspection, aud examined the thorax by percussion, a practice in which he had much experience; he stated it as his opinion, that the lungs were hepatized through their whole extent. This I should have expected from my recollection of the previous history of the case; and I have no doubt, had the dissection of the body been permitted, and according to the wish of the surviving friends of this patient, that the appearances found, would correspond with those stated to have been observed in the examination of the bodies of those who died of the blue cholera in other places, and such as I ascertained to have taken place, both in the dis-

section of human subjects and of horses, who died of the pestilential distemper in 1828.—(See pages 8, 67, to 72 of the Second Part of my Pathological Observations ; also, the 152, 153, and 154th pages.

From the apparent malignity of this case, I was led to enquire particularly whether the patient had been exposed to the contagion, or whether, under the very unfavourable circumstances in which I found him, the disease had extended to others, and learned that he had not been exposed, nor had the disease been communicated. This, with what I observed respecting the female patient, Catherine Redmond, further corroborate the opinion I bave long entertained, that typhus fever, or typhoid cholera is not contagious in the first or early stages ; and I think it probable, that the observation of Baron Larrey, like all taken from actual inspection is just, that it is only after exanthemes, as he calls them, or pestilential bubos occur in epidemic distempers, that they become actively contagious ; and in speaking of this distinguished surgeon, I would add, that his statement of the frequent volvuli, or invaginations of the intestinal canal, which he has found on the bodies of those he examined who died of pestilential cholera, entirely concurs with my experience, limited indeed by the restrictions on dissections in the hospital where I have attended, but less so in private practice. From the 191st to the 202d pages of the Second Part of my Pathological Observations, some cases and dissections may be seen in favour of the opinion which has been just expressed respecting the frequency of invaginations as causes of death in epidemic diseases.

Although I have already given rather more space than I intended to the cases offered as specimens of the prevailing cholera morbus, I am induced to add a short abridgment of three others, which though comparatively slight, appear to me from their origin to afford some light on the inquiry so important at present. Whether cholera be propagated more by contagion or by atmospherical distemperature, and in what circumstances it is more or less contagious? For, each of the three cases is dated from its relapse in the convalescent wards ; and but a few days subsequent to that of Mary Byrne, whose case is the third in the preceding series, and who died of blue cholera ; and though their symptoms were by no means so severe as her's ; yet, they resembled each other. On that account, and because another female died suddenly im the same convalescent wards about the same period, screaming and vomiting blood, I suggested to the Managing Committee, the possibility of the epidemic becoming more pestilential amongst crowded convalescents than amongst those actually sick, who lay in extensive wards, the beds being widely separated from each other ; and I also would now advert to the remarks made on the

cases of malignant cholera of the patient, Catherine Redmond, and that of Thomas Martin, whose diseases did not appear to have extended to any other individual. Therefore I recommended as a measure of precaution, that the convalescent patients should be distributed equally both by day and by night in the wards allotted to them, so as to prevent their congregation at any time.

CASE SIXTH.

Anne Murray, aged 49, admitted the 13th of December, with severe dyspnæa and general anasarca, symptoms which she stated to have succeeded to violent purging and vomiting, accompanied with acute spasmodic pains of the belly and limbs, and she states this attack to have commenced nearly three weeks before.* At present, belly costive, urine scanty, pulse full and bounding; some degree of ascites and anasarca of the lower extremities. Prescribed an oil draught and enema.

For some days afterwards the pectoral affection continued, but was ultimately relieved by a blister between the shoulders, cough mixture and a repetition of the oil draught; and on the 25th she was sent to the convalescent wing, where she relapsed on the 28th, with the following symptoms. Sudden prostration of strength, and as sudden disappearance of the anasarca of the extremities, which till then had in some degree remained: very frequent vomiting and purging of a white rice creamy-looking fluid; failure of pulse; coldness and clamminess of the skin; pallidness of face, and shrinking of features. Being remitted to the fever wing, the following remedies were prescribed:

℞. Aquæ uncias octo, spiritus ammoniæ aromatici drachmas duas, liquoris œtherei oleosi drachmas duas, syrupi unciam, misce, sumat cochleare amplum omni horā. Enema anodynum vespere. Applicetur emplastrum vesicatonum scrobiculo cordis et mittetur sanquis e brachio ad uncias octo.

December 29th.—Diarrhæa ceased since the anodyne enema, but vomiting severe, and the spasmodic pain of belly and limbs continues; skin hot, pulse strong. Applicentur hirudines quindecim epigastrio. Fricetur abdomen oleo teribenthinæ, et tegatur panno laneo. Injicietur statim enema terebinthinatum cam olei ricini unciā unā. Repetatur mistura aromatica. Let her have dandelion coffee and four ounces of wine diluted in the course of twenty-four hours.

December 30th.—The vomiting and purging are in some degree relieved; the pain not so constant, but is in some measure increased by spasms which extend from the belly downwards to the calves of the legs, and which she now states in the presence of Mr. Hale

* It should be here remarked that all the chronic cases of cholera were stated by the patients themselves to have commenced like that of AnneMurray, and that most of them sooner or later terminated in general or local dropsy.

and Mr. Lawless, the apothecaries; and the nurse Dunn adds, that the spasms have been sometimes so violent since coming back to the fever-wards, as to "double her body together," and this to have been the case ever since her relapse in the convalescent wards. What is ejected by vomiting and purging is still as it was from the beginning of this last attack, like rice-cream: she did not get the dandelion coffee ordered, and she rejects the aromatic mixture, and almost every thing else she drinks. The leeches discharged well.

Omittantur hirudines et mistura aromatica. Repetantur alia.

December 31st.—Better in every respect; slept well, and feels some desire for food; likes the dandelion coffee greatly; and it and the other remedies lie well on her stomach.

Repetantur omnia.

January 1st, 1832.—Convalescent, and her chronic complaints, as well as the more acute, are doing well.

CASE SEVENTH.

Catherine Lynch, aged 32, admitted with symptoms of cholera, from which he was soon recovered by the usual remedies, and she was sent to the convalescent ward on the 25th instant, where she relapsed on the 29th with severe purging and vomiting, spasmodic pains of the belly and limbs, the calves of the legs; the stools like turbid rice-water; tongue red, soft, and clean; skin warm, pulse quick, and rather hard.

Prescribed venasection to nine ounces. The friction of the belly with turpentine, and the aromatic mixture as in the preceding cases, and an anodyne injection in the evening.

December 30th.—Blood dark and clotted, the pain and cramps in the belly and legs are much relieved, but her stomach still rejects every thing but the dandelion coffee. Tongue clean, red, and soft; pulse less hard, but she complains of some head-ache to-day, and wishes to have the head shaved. Let the head be shaved and washed with spirits of wine and covered with a flannel cap.

N. B.—The fluid vomited and passed by stool, has still the same appearance of turbid rice-water.

Omittatur venæ sectio. Repetantur alia. Injicietur enema anodynum statim, vespere urgente vomitu repetendum.

December 31st.—Is better in every respect to-day; the vomiting and purging comes on occasionally, but with much less pain; she likes the dandelion coffee very much, and it settles her stomach, and she wishes for a little boiled milk also. Let her have both.

January 1st, 1832.—Convalescent. See Note—Appendix.

CASE EIGHTH.

Margret Buckley, aged 50.—This woman relapsed also in the convalescent wards on the 28th. Her symptoms, treatment, and their consequences resembling the two preceding in nearly the most minute circumstances, therefore need not be further detailed.

January 1st, 1832.—Convalescent.

I shall now proceed to the extracts from those letters, which, under an imperative sense of duty, as senior physician to the Fever Hospital and House of Recovery, I was induced to address to the managing committee, with a view to some regulations which, under existing circumstances, might promote the original design of that institution, namely, the relief of those affected with epidemic and pestilential diseases,* and the acquisition and diffusion of medical knowledge.†

"To conciliate the indulgence of the public which I feel I stand so much in need of, I have to premise, that in this part of my duty, I mean to rely chiefly on those results of my experience, to be found in the registry and annual reports of the proceedings of the Cork-street Fever Hospital. And though from those sources no new matter may be derived upon a subject about which so so much has been said and written of late; still by comparing those documents in your hands with the last accounts which have reached us of cholera morbus in other places, I hope to show the identity in all the essentials of that devastating epidemic abroad, with the typhus fevers of this country with which we have been so long acquainted; so as to enable us to aid those humane men now engaged in investigating the nature and causes of the threatened calamity. That the experience of those engaged in the treatment of epidemic and pestilential fevers during their unprecedented growth and malignity in Dublin for the last thirty years,‡ can afford that assistance is a reasonable expectation; and by availing myself of it on the present occasion, I hope to prevent the overwhelming panic, and its injurious consequences which might follow any remarkable increase in the num-

* Original resolutions, &c. by the Managing Committee in their first Report, Dublin 1804: "That to relieve the destitute poor afflicted with fever, and to check the progress of contagion are the main objects of the proposed institution." Page 5.

† First Medical Report, Dublin, 1806, (page 11,) the physicians state their objects to be: 1st, "The prevention of infection: 2dly, the alleviation of diseases; and thirdly, the acquisition and diffusion of medical knowledge."

‡ Admitted from the 14th of May, 1804, to 4th of January 1831, inclusive, 84,588 patients into the Fever Hospital in Cork-street, alone; of which 5,352 died, the mortality being nearly as 1 to 16 admissions within the last year patients have been admitted, and have died, a mortality of 1 to . The latter period may be adverted to more especially in comparing the course of the epidemic of Dublin and that of Sunderland during the corresponding two months.

bers affected with cholera in the course of the present winter, an increase which I have some reason to apprehend since the re-commencement of my intern attendance at the Cork-street Hospital on the 3d instant, as intimated in the obituary attached to the diet-tables for that period.

"To compare the numerous reports of the acquired malignity of cholera morbus in various parts of the world within the last eleven years with the history of the rise and progress of epidemic fevers in Ireland during a much longer period, would almost require a large dissertation. In a letter, therefore, hastily drawn up to meet present circumstances, a brief reference to the relative sides of the parallel must suffice, I shall therefore briefly refer to the succinct account by Baron Larrey, to be found in his Treatise on Cholera Morbus, the result of that author's extensive and actual observation on that disease in various parts of the world, and compare it with the synoptical retrospect at the rise and progress of fever, as it has appeared in the Cork-street Hospital, which may be seen at the beginning of the report for the year 1828. The coincidence just adverted to will, I think, appear manifest, and that the origin, the causes of growth and propagation, the symptoms, the treatment, preventative, and remedial, the appearance of blood drawn during disease, and found accumulated in the vital organs after death, the post mortem examination, both of the cadaver externally and by dissection, all indicate in each of the documents referred to, a community of the nature of malignant cholera and the malignant epidemic fevers so long known in Ireland, and as clearly point to the same means of prevention and cure.

"That Baron Larrey arrived at similar conclusions may, I think, be fairly inferred from the following passage at the 19th page of his valuable Treatise:—'We have seldom seen (he continues) epidemics develop themselves in such terrific strength in our armies, as amongst our English, Spanish, Austrian, and Russian prisoners of war—(see l'historie de nos campagnes.)—In all epidemics the prevailing symptoms are almost always vomitings, (more or less frequent) violent colics, dysentery, fluxes, prostration of strength and coldness of the extremities. The epidemics, which we witnessed in Spain, Italy, Germany, and France, on our return from the Russian campaign, and that which prevailed in Ireland in 1827, at the time of my voyage to England, pre-

sented with few variations these principal features.—Doubtless, if under the circumstances the word cholera morbus had been uttered, it would have been difficult to dispute its existence.'

"As the publications referred to in these extracts, may not be in the hands of the reader, I shall transcribe Baron Larrey's account of the symptoms of cholera, that they may be compared with the cases detailed in the 45th and following pages of my report from the Fever Hospital in the year 1828, and to those now subjoined to my preliminary observations. This will at least show the similarity between those cases I gave as specimens of the Irish cholera, and those observed by M. Gœury in Poland, and perhaps too the dissimilarity of both to those cases of cholera asphyxia, reported to have occurred in Sunderland and other places adjacent to the collieries, and which I have already attributed to that circumstance.

"The symptoms of cholera observed by M. Gœury, in Poland, are as follows:—'Face livid, blue, and cold; eyes sunk in the orbits, expressing terror; extremity of the nose cold; mouth open; the lips covered with a fuliginous scum; teeth dry and yellow; tongue cold, blue, and shrivelled, sometimes pale on the surface, seldom red and dry; frequent hiccups; vomitings of white sero-albuminous matter, rarely bilious; alvine dejections often repeated, and in small quantities. The white or yellow matters exhale an acid odour. Sometimes there are neither vomitings, hiccups, nor dejections.

"'The patient feels painful cramps in all his limbs, which principally attack the forearms and calves of the legs, and draws forth piercing cries. During the continuance of these cramps the contraction of the muscles is manifest: this symptom is invariable.

"'The head is painful, the patient feels a sensation of pain in all the passages of the digestive tube; the sweat, which covers his body is cold, and clammy, and exhales a heavy smell. The sweat often appears on persons sinking under violent pain. The extremities of the body, such as the hands, feet, shoulders, nose, tongue, and chin are cold; the hands and feet present ecchymoses; the integuments of the whole body assume a bluish tinge; the nails become livid, and tarnished. The faculties remain perfect to the last moment.

"'The prostration of strength is so great, that the pa-

tient is often apparently dead. He cannot support himself, and lies of his own accord on his belly.

"'Respiration is slow, circulation almost ceases in the extremities, the pulse scarcely perceptible in the brachial artery, the beating of the heart convulsive, the oxygenation of the blood seems suspended.

"'The functions of secretion are entirely suspended.'

"As I cannot indulge in longer extracts, I beg leave to refer to the treatises from which the foregoing is taken, and must hasten to conclude by a brief enumeration of those regulations which I have already taken the liberty to suggest for your consideration under present circumstances. Whether typhoid or malignant cholera be contagious or not; the rapidity of its course in some cases from the commencement to its fatal termination, demands that no time should be lost in the removal of those who apply for admission into the hospitals; and if the application book be consulted, as well as the diet tables kept at the Fever Hospital in Cork-street, and the numbers ascertained who have died before or shortly after admission within the last twelve months, it would perhaps then be found advisable to curtail some of the impediments that at present stand in the way of immediate admission. On the same account I beg leave again to call your attention to those suggestions which I have already submitted as to the mode of dressing and conveying the patients to the hospital.

"With respect to the particular modes of treatment which our fevers may demand, by assuming those symptoms in a higher degree, which the prevailing epidemic constitution of air tends to produce, I hope shortly to descant rather more freely than I would wish to do at present without the advantages of consultation with my respective colleagues, and such as I could not have been indulged with during the few days, since my last intern attendance. But I cannot conclude without taking the liberty of suggesting, that there never was a period which, in my opinion, more demands post mortem inquiries into the causes of death than that at present; and therefore I intreat your consideration to those restrictions on such inquiries at the Cork-street Hospital, which I believe to be alike prejudicial to the advancement of medical science, and to the security of the best interests of society."

"The sameness of predisposing causes (letter of the

14th instant) to cholera and to other epidemic fevers in Asia and other countries, appear very remarkable in this comparison. For we find poverty with its causes and consequences in crowded communities detailed by all actual observers on these epidemics, to be the chief predisposing, often the principal exciting cause. Atmospherical distemperature, malaria, and contagion, are indeed generally ranked among the exciting canses; but there is total discordance as to the share they respectively take in propagating the disease; and though we have proof of the activity of each of them occasionally, facts are wanting to show the uniformity or constancy of any of those morbific agents. On this question, which appears to me of great importance at present, particularly as respects the means of prevention, I beg to call your investigation to those several exciting causes, which you will find from the 8th to the 42d pages, inclusive of the annual report from the Cork-street Hospital, for the year 1828, particularly as regards the distinctive characteristics which the transitive properties of such causes impress on the several species of disease. Malaria giving to the pestilential fever the form of ague; and contagion, or those moral or physical causes, which of themselves oftenest produce the debilitating typhus, as generally obliterating the intermittent movements or cycles of energy and collapse, thus opposing the strife of diseased action and vital power. It is here, I think, well worthy of remark, that in the years 1819—20, when intermittents prevailed, typhus fever was seldom to be met with, and vice versa in all the other years."

The following extract from my Report of the Fever Hospital and House of Recovery, in Cork-street, for the year 1828, (page 16 to 19 inclusive) may be advantageously placed in juxta-position with the foregoing; more especially, as besides detailing symptoms, it indicates the relative influence of the various causes just adverted to, and shows the position I have felt it my duty to take in the discussion of these causes. "The peculiar symptoms of that sickness, which during the years 1818 and 1826, formed the extraordinary increase, consisted chiefly in a pallid and anxious countenance, a chilled or parched skin, keen sense of hunger, extreme dejection of spirits. Such were its symptoms. It must be necessary to observe that these symptoms differ from those of positive disease, rather by deficiency than contrariety, as violet differs from yellow,

or one from five. Besides this general distinction however, there is one contrariety, viz.; in one case there was a keen sense of hunger, in the other nausea. This deserves to be noticed more particularly, because it shows not only a postive difference in the existing symptoms, but also a positive difference in the origin of the disorder: for according to general experience, wherever there has been contagion, there must be nausea. Not, indeed, that where there has been no contagion, there can be no nausea; but that where there is no nausea, there can have been no contagion.

"The intermissions and paroxysms which universally attend malaria, are too remarkable to allow, even for a moment, the supposition of their identity with the sickness in question."

"Whenever, indeed, the sufferers from famine are exposed either to contagion or malaria, which have been so long rivals in their pernicious agency amongst our poor, their bodily and mental exhaustion giving a powerful predisposition to be so affected: symptoms succeed, such as frequently characterise the fevers produced by either of these morbific causes. Very often, too, as may be supposed, under circumstances so favourable to the generation of contagion, it springs up spontaneously; and hence pestilence frequently succeeds to famine. But I have generally found, that when fevers arise from any other cause than privation of food, the effects can be as generally recognised in the characters of the disease; the typhoid form, in a greater or less degree, succeeding exposure to contagion; whilst ague, in some of its types, succeeds exposure to malaria.

"The distinctness of the symptoms arising from distinct causes of fever, may be further illustrated by the fact, that the nursetenders of the hospital, on receiving successive patients, and in epidemic fever, from the same family, are able by describing the preceding cases accurately, to foretel a similar train of symptoms. Of the distinct natures of fever from contagion and from malaria, further proof is afforded by the preceding table. It may be perceived that in those years, when from contagion, typhus fever was most prevalent, agues were little or not at all known; whilst in other years, as 1809 and 1828, in which the subsidence of continued fever was most remarkable, the frequency of intermittents was also most remarkable. I am the more desirous to dwell on these distinctions,

being persuaded that the great discrepancy of opinion which has for some time existed among the physicians of Great Britain and Ireland, on the snbject of contagion and malaria, has arisen chiefly from want of due attention to the effects of those agents separately, and also from confounding them with those from other causes. To that confusion probably may be attributed the many pernicious mistakes which have taken place, both in devising means of prevention and in prescribing modes of treatment for febrile diseases."*

When typhus fever prevailed here, ague was unknown; therefore, whilst the community of typhoid symptoms in the cholera of Dublin and of Sunderland identify them, that of Sunderland is much more identified with the Indian and Continental cholera by its tendency to paroxysms. But on the other hand, the peculiar rapidity and severity of the symptoms, I think, distinguish the cholera in the neighbourhood of the coal-pits, from that of all other places.

Having now touched upon such points of this comparison, as I hope will be deemed useful to the public, and dwelt on them as long as the time I could spare from other occupations would permit, I must refer the reader to the publications, on which I relied in recommending its extension; more especially to the history of cholera given in the Lancet, and Baron Larrey's Treatise on the one hand; and to the works of Rogers, Maurice O'Connel, and of the physicians of the Fever Hospital and House of Recovery in Cork-street, on the other; and hasten to conclude with some practical observations on the result of that comparison and its application to the best means of prevention and cure; and which will besides afford the best test of the utility of the comparison proposed, as it does of every theory.

TREATMENT, PREVENTIVE, AND CURATIVE.

In whatever degree I may have shown the identity of the blue cholera of other countries with the typhoid cho-

* In the newspapers of 6th to the 8th of December last, (1827) see notice of the remonstrances of the French physicians, with their government, at sending none but ultra contagionists to inquire into the causes of the pestilential fever then prevailing in Gibralter; remonstrances with which I entirely accord and sincerely sympathise.

lera of Ireland, I have shown also the applicability of the same means which have been found successful in the one to the treatment of the other, and therefore for the general mode of treatment I would recommend on the present occasion, I again refer to the results of my experience published in my reports from the Fever Hospital and House of Recovery in Cork-street, as well with respect to prevention as to cure. Poverty and weakness of body and mind appear to have been the chief predisposing causes to this disease elsewhere as in Ireland;* and on that account I would refer to the same preventative treatment for this and for typhus fever, also detailed in the Fever Hospital reports, and confine myself now to such practical observations as my experience in those forms of blue cholera which I witnessed may enable me to suggest—I say forms, on account of the fitful and irregular course of that disease, sometimes completing its whole course in what was at other times considered only as a single stage, or the first stage was wholly wanting or came last. Instead, therefore, of stages on which it has been usual to divide the medical treatment of cholera, I shall make the following brief practical observations on the cholera asphyxia, the cholera spasmodica; and the cholera typhoidea.

In the cholera asphyxia, the sudden suspension of the functions of life will not admit of a moment's time for considering the cause of that suspension, for the immediate restoration of these functions can alone preserve the patient. Such cases indeed are seldom met with in hospitals, and least of all in the Cork-street hospital, under those restrictions to instant admission referred to in my letter of the 7th of December to the managing committee, but I have seen several of them in private practice, and I shall proceed to detail the means which I have found useful in some of them. In the case of a young married lady convalescent from bilious fever, complicated with delicacy incident to the birth of numerous children with short intervals, who was suddenly attacked with cholera asphyxia, the first symptom, in the language of the distinguished Majendie, being apparent death, (for there was

* Pathological Observations, Part 3d, Dublin 1830. See Preface, passim and the commencement of the Treatise from the 10th to 25th page.

neither the colour, the warmth, nor the pulse of life,) I directed boiling water in tea-cups, with a thin napkin wrapped over their mouths, to be applied to the sternum and scrobiculus cordis, which acted immediately like galvanism on the lifeless body, and the vital functions were restored, the stomach and intestines rejecting their morbid contents; respiration, circulation, and vital heat succeeding; and under the use of an aromatic mixture alternated with wine and nutritious fluids, she gradually recovered, and lived several years afterwards. I might add several cases of the same kind, but I must also mention, this remedy was too late in others to be successful. In these too my recollection suggests a remedy which I would recommend as a dernier resort, when the suspension of vital power depends, as I believe, in cholera asphyxia it often does, on the accumulation of some pernicious injesta or morbid secretion into the stomach. This remedy is the stomach-pump, by which the poisonous fluid may be removed and afterwards replaced by ammoniated mixture or such other medicated or nutritious fluids as may be best suited to restore the tone and energy of the stomach, on which that of every other organ so mainly depends. Indeed I am fully persuaded that lives might be saved by this remedy when all others are inapplicable, and therefore would strongly urge when or wherever the cholera asphyxia prevails, that the medical officers be directed to hold it in view, and that a stomach-pump be kept at every dispensary, receiving house, or lazaretto, provided for patients affected with that disease.

There are other means in asphyxia which I would recommend, but that they have been already noticed in the reports from the Boards of Health, and in Drs. Russell and Barry's late sanatary letters, I mean preserving such patients in the horizontal posture, and vigorously employing external warmth and friction whilst the least appearance of life remains, or until it is fully restored. (See Note in Appendix.)

With respect to bleeding, general or local in the state of collapse attendant on this disease, nature herself seems to have decided against it, and from my experience of bleeding either in the cold fit of ague or in the collapse, or debility of typhus, I would say with the judicious Mr. Boyle when he heard of a patient who was bled in cholera asphyxia and recovered, that such might indeed

have happened, but certainly, we would attribute the fortunate event rather to the vires medicatrices, naturæ than to the means employed. When, however, reaction succeeds I have employed bleeding, or in lieu of it other evacuants, as pain, oppression, or any other symptoms of inflammation seemed to demand it, in the manner described in the preceding pages in those specimens I have given of cholera, and of my treatment of that disease.

In treating the cholera spasmodica, I have been guided by the same principles in every stage, both in the employment of stimulants and evacuants, and refer for specimens of that treatment also to the detailed cases, and shall conclude my practical observations on cholera spasmodica, by offering my confident testimony in favour of preparations of ammonia in every form of the disease. I speak so from long experience, and from numerous cases of indigenous cholera, and of the aggravated forms, which it has of late assumed. The beneficial effects of it in the Asiatic cholera, are recorded in a letter written by M. Kuttinger, dated Bourdeaux, September 23, 1831. "Recollecting (he continues) an energetic remedy recommended by Dr. Noel, who has used it with success when the Asiatic cholera raged with fury in the army of the expedition, of which he was the chief surgeon at the time of landing on the Coromandel coast in 1781, I tried its effects in indigenous cholera. It is ammonia given internally—the first dose, thirty-six drops in a strong infusion of balm sweetened with a sufficient quantity of sugar. Every two hours afterwards, the patient is to take ten drops of ammonia in the same liquid. After the third or fourth dose, all alarming symptoms disappear, the vomitings are afterwards less frequent; the cholic pains and the burning heat at the alimentary canal, and the cramps sensibly subside; after the first doses the pulse revives, and the patient falls into an agreeable and tranquil sleep. It is rarely necessary to have recourse to the seventh dose; lukewarm diluent mucilaginous drinks complete the cure."

I administer the ammonia under the form of the compound spirit, two drachms diluted with six ounces of water, and half an ounce of syrup, in doses of a table-spoonful every half hour; sometimes adding tincture of opium to the mixture: at others, making camphorated mixture the menstruum. It appear to act as a useful diffusive

stimulent, rousing the languid circulation, especially in the organs of sanguification, and thereby promoting the secretions and the evolution of caloric.

In the cholera typhoidea, the treatment differs from the other two forms already adverted to, and so far the remedies found most beneficial in typhus fever are most applicable to it; but to give even a list of these would require more room than there is now left. I shall confine myself therefore to two, namely, barm or yeast, and dandelion-root, prepared as coffee. Of the former I can repeat the testimony I gave of it many years ago in my treatise on fever, and it is equally applicable to typhoid cholera and simple typhus fever. "I have administered it (barm) in cases where purple extremities or gangrenous sloughing took place, and when peruvian bark could not be given with advantage on account of some urgent symptoms being present; and when bark was not so contra-indicated, I have found the efficacy of that valuable remedy increased by administering barm with it. I administered with it tincture of opium if the bowels were too free, and with tincture of jalap when the converse of this (as often happens in cholera) took place. I have found it to correct the morbid contents of the alimentary canal, and consequently petechiæ and black loaded tongue. It is well suited to every stage of typhus fever, and in general, taken with camphorated mixture agrees with the stomach, and in the worst cases the patient generally expresses a liking for it; the bitter taste which, to a person in health might be disagreeable, instinctively recommending it to the sick for their relief."* With respect to the dandelion-root and milfoil, I can from my subsequent experience in the two last years, more confidently repeat the evidence I gave in their favour in the Third Part of my Pathological Observations, published 1830, viz:—

"There was still another combination of symptoms connected with the pestilential form of the epidemic in the last two months, which should not be omitted to be noticed on the present occasion, viz. that of cholera morbus, which in several instances was extremely obstinate as a distinct disease, and generally fatal when complicated

* See Dublin Medical Essays, A. D. 1805; Treatise on Fever, London, 1812; Pathological Observations, Part First, 1818; Part Second, 1828; Part Third, 1830.

with typhus. In such cases as the last, stercoracious or black vomiting, and involuntary melænous stools often preceded death. But in all these cases the cordial and sedative qualities of milfoil and dandelion were very remarkable. for in some of the slighter cases, sickness and vomiting were immediately relieved, particularly by the dandelion coffee; and in the more obstinate (especially in three out of four of the fatal cases) this agreeable beverage arrested the vomiting, even though spiced wine and compound infusion of mint had been previously tried in vain."*

Did time permit I would dwell on the treatment of other frequent combinations with cholera which I have observed in the last three years, more especially, when as often happened, rheumatism giving it the character of the La Grippe of the French commenced with it; or when dropsy as almost always happened, supervened on its chronic state; but I must hasten to conclude, as I commenced with reference to my reports, and on these latter points also can only add, that in all such conditions I have experienced the most decided success from preparations of milfoil. (See Appendix—Note.)

P. S.—As this comparative view has already exceeded the limits I intended, I shall for the present defer the Appendix which I proposed to add to it until the close of the present month, in order to prefix some practical observations on other combinations of cholera, besides those of the cholera asphyxia, c typhoidea, and c spasmodica, more especially as respects the complications of these forms with dropsy or rheumatism.

* See Pathological Observations, Part Third; Dublin, 1830. p. 101.

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